SYLLABUS

Introduction to Shielded Metal Arc Welding (SMAW)
Welding Technology -IT 2307-001
Fall 2021

Syllabus Sections

Publish Date 9/01/2021

Course Information Tuesday &Thursday 02:00-4:30 PM

Office Hours Friday mornings by appointment only.

Course Description

Welding 10964-IT 2307-001: *Introduction to Shielded Metal Arc Welding***.** An introduction to the shielded metal arc welding process. Emphasis placed on power sources, electrode selection, oxy-fuel cutting, and various joint designs. Instruction provided in SMAW fillet weld is in various positions.

Credit and Format

You will receive 3 hours of college credit when you successfully complete this course. During the fall semester, the course will meet for sixteen weeks scheduled in the following format: Twice weekly for 2 hr. 50 min. per class.

STUDENT LEARNING OUTCOMES/LEARNING OBJECTIVES

Course Objective

Students take this course typically have no experience in welding technology, but would like to learn about Shielded Metal Arc Welding as an introduction to the profession.

End of Course Outcomes

Select electrodes and amperage settings for various thicknesses of materials and welding positions; define principles of arc welding; explain electrode classifications; perform SMAW operations in various positions using selected electrodes and different joint designs.

COURSE SUBJECTS

PROJECT LIST

Surfacing

Project Number	**Skill**
1. Flat.....	E-6010
2. Horizontal.....	E-6010
3. Vertical.....	E-6010
4. Overhead.....	E-6010
5. Flat.....	E-7018

Surfacing, continued

Project Number	Skill
6. Horizontal.....	E-7018
7. Vertical.....	E-7018
8. Overhead.....	E-7018

Oxy-Fuel Cutting (OFC)

Project Number	Skill
9. Manual Torch	
10. Track Torch	

COURSE REQUIREMENTS

Attendance/ Class Participation

Regular and punctual class and laboratory attendance is expected of all students. If attendance or compliance with other course policies is unsatisfactory, the instructor may withdraw students from the class. If you accumulate 6 unexcused absences AND If the fall semester withdrawal date has passed, you will receive the grade of **F**.

Excessive absences result in (1) your failure to progress towards the objectives of the course, (2) unfair demands on your instructor's time by taking him/her away from responsible students in order to catch you up on missed assignments, and most important (3) you become an increased safety risk due to your diminished familiarity with hazardous equipment and safety protocols.

Scholastic Dishonesty

A student attending Sul Ross State University assumes responsibility for conduct compatible with the mission of the college as an educational institution. Students have the responsibility to submit coursework that is the result of their own thought, research, or self-expression. Students must follow all instructions given by faculty or designated college representatives when taking examinations, placement assessments, tests, quizzes, and evaluations.
Actions constituting scholastic dishonesty include, but are not limited to, plagiarism, cheating, fabrication, collusion, and falsifying documents. Penalties for scholastic dishonesty will depend upon the nature of the violation and may range from lowering a grade on one assignment to an "F" in the course and/or expulsion from the college.

Safety Regulations

Welding can become very dangerous—even fatal—if you are careless and neglect safety precautions. Most accidents occur when people get in a hurry, so learn to pace yourself and move cautiously and deliberately. The College endeavors to provide you with proper training and a safe environment, but you must also do your part by abiding by the following rules. *If you persistently violate these rules, you will be considered a safety risk and will be withdrawn from class:*

1. Wear your safety glasses at all times.

2. Wear your ear plugs in areas of high noise levels.

3. Know the locations and proper use of fire extinguishers. They are located at the exit to every classroom and laboratory.

4. Do not weld or grind near oxy-fuel tanks, manifold connections, or other potential sources for gas leaks.

5. Beware of the signs of dehydration, especially during warm months: disorientation, confusion, light-headedness, flushed appearance, headache, exhaustion. Do not wait until these signs appear—drink fluids and take breaks regularly.

6. Be mindful of proper ventilation in your work area.

7. When using portable grinders, be sure that you direct sparks away from others.

8. When using stationary pedestal grinders, be sure that the tool rest is adjusted as close to the grinding wheel as possible without touching it (1/16”). Always wear safety glasses when grinding and wire brushing. Do not wear gloves when using pedestal grinders.

9. Do not handle oxy-fuel equipment with oil or grease on your hands or clothing.

10. Do not wear loose or dangling clothing, jewelry, or hair when welding or handling materials.

11. Be sure that you have the proper shade of filter lens in your welding helmet or face shield.

12. Do not attach your ground lead to water pipes or electrical conduit.

13. When welding in a booth, keep your door closed. When welding in an open area, shield your arc with welding curtains. Always consider the line-of-sight between your arc and the eyes of bystanders.

14. To avoid burns to others, do not discard hot metal without first quenching it. Write “***HOT***” on objects too large to bring to the quench tank.

15. Report all accidents to your instructor without delay. If you suspect an unsafe condition or an equipment malfunction, bring it to you instructor’s attention *IMMEDIATELY*.

Laboratory Policy

1. You must attend class at the time for which you are enrolled. If you develop a schedule conflict, see your instructor regarding an intradepartmental transfer.

2. When you complete a project, request approval from your instructor. You will not be credited for unproved projects.

3. Cleanup time is ten minutes before the end of class. Sweep your immediate work area and return equipment to the tool room. Surrounding work areas must be cleaned with the combined efforts of all students.

4. Do not waste metal. Cut away practice welds and consolidate pieces. Do not remove metal from the shop. This will help keep lab fees reasonable in the face of rising costs for steel.

5. If there is an equipment malfunction, inform your instructor immediately so that it can be repaired and returned to service.

6. Smoking and eating are not permitted in the laboratories or classrooms.

Calculation of Final Grade

Projects..... 70%

Examinations-Midterm & Final…..Average of Grades……..30%

SAFETY AGREEMENT

By signing my name below, I am attesting that my instructor has made me aware that welding is dangerous if I ignore applicable safety regulations and laboratory policies. I under-stand that I will acquire the knowledge of these regulations and policies by (1) reading the course syllabus attached to this *Project List*, (2) observing all safety and warning signs posted in the laboratories and classroom, and (3) attending in-class safety demonstrations on equipment and shop practic-es given by my instructor through-out the course. I understand that it is my responsibility to attend class regularly, be alert to my surroundings, and remain constantly vigilant to the risks of working in an industrial envi-ronment. I understand that "safe practice" is the discretionary inter-pretation of my instructor, and that if I fail to adhere to these requirements—*including the attendance policy outlined in the syllabus*—

I will be considered a safety risk to myself and others and I may be withdrawn or possibly fail the course.

Student (print name)_____ Student (signature)_____

Emergency Contact Person_____

Emergency Phone_____