



TEWT 1210 – SHIELD METAL ARC WELDING (SMAW) I

COURSE DESCRIPTION:

Introduction to the Shielded Metal Arc Welding process and safe practices are taught. Learn practical welding skills on carbon steel. Techniques in striking and controlling the arc, surfacing and fillet welds with single and multiple passes. Bead placement and sequence are taught. Students will experience welding in all positions with a variety of welding electrodes.

COURSE PREREQUISITES: TEWT 1105 with a C or better

CREDIT HOURS: 4

REQUIRED TEXT:

Welding Principles and applications, 9th edition, by Larry Jeffus
Cengage Learning, Inc.
ISBN: 2019920402

LEARNING OBJECTIVE:

At the completion of this course, students shall have demonstrated to the instructor job entry level competencies, including:

- Demonstrate safe shop and process practices
- Identify the basic elements of electricity and electrical theory
- Perform equipment set-up and proper power source adjustment
- Follow welding procedure specifications
- Demonstrate Striking & controlling the arc
- Employ welding skills on lap joints in all welding positions
- Demonstrate welding skills on inside/outside corner joints in all welding positions
- Identify electrode classifications and select the appropriate electrode
- Critique welds to a quality standard

REQUIRED ASSESSMENTS:

- Pass a Shield Metal Arc Welding Safety Exam with 100% accuracy
- Objectives must be passed at an 80% in order to demonstrate competency mastery

Score	Criteria
4	Welds are desirable and completed ahead of time schedule
3	Welds are desirable
2	Welds are acceptable
1	Welds do not meet AWS minimum standards. You cannot move pass this course until welds have exceeded this level.
Note on Performance Criteria: All welds are a pass or fail and are expected to meet American Welding Society (AWS) D.1.1 weld profile and standards (See AWS d.1.1 2020 Structural Welding Code – Steel, page 219, 8.9 Visual Inspection and page 239 table 8.1)	

- A 93% and above
- A- 90% – 92.9%
- B+ 87% – 89.9%
- B 83% – 86.9%
- B- 80% – 82.9%
- C+ 77% – 79.9%
- C 73% – 78.9%
- E Below 72.9%

Attendance and Participation	10%
Canvas Assignments	30%
Lab Assignments	60%
Total	100%

MATERIALS: Welding Tools & Personal Protective Equipment (PPE)

Because of their personal nature, and the necessity for welders to have these items on a job, students are required to purchase their own PPE and tools. Each welding student should obtain one each of the following PPE & Tools prior to starting lab courses.

PPE:

- Safety Glasses (Clear Lenses Only)
- Heavy Welding Gloves
- Light Weight MIG Welding Gloves
- Clear Face Shield
- Welding Helmet (Passive or Automatic) (Lincoln, Miller, or Speedglass brands preferred for Auto-darkening)
- Welding Cap
- Welding Jacket
- Split Leg Leather Apron or Leather Chaps, or Coveralls (Must be cotton, denim, or twill material. (NO SYNTHETICS!))
- Work boots (Over the ankle. Steel toes not required.)

Tools:

- Vise Grip Pliers (Optional – Vise Grip “C” Clamp)
- Soap Stone with Holder (Rectangular shape preferred)
- Wire Brush
- Chipping Hammer
- Welding Pliers (Special tool for wire feed processes. (WELPERS® or generic brand like Harbor Freight)

ATTENDANCE

It is expected that students attend class regularly and on time to ensure they make satisfactory progress toward course/program completion. Attendance is tracked and reported as required to sponsoring agencies and Financial Aid when applicable. It is the student's responsibility to contact their instructor when they are absent. Contact the academic advisor if missing a week or more.

Students missing two weeks will be automatically dropped from the course/program. The Salt Lake Technical College at SLCC has a ***no make-up policy***.

TARDINESS

You are expected to be on time for class. If more than 15 minutes late for class, you are considered late, and your time will be reduced on the attendance form. Tardiness can affect your attendance.

STUDENT RESPONSIBILITIES

It is your responsibility to complete all the materials as outlined in the learning modules. It is also your responsibility to ask for help when material is unclear and needs further clarification. Please maintain lab tools and equipment and clean **ALL** your workstations at the completion of your lab class. Please approach the instructor with any situation or conditions that might interfere or affect your progress and success.

Mobile phones may be used in the classroom but must be on silent or vibrate mode. If you receive a call, please leave the classroom briefly. Making telephone calls and/or texting during class should be restricted for urgent or emergency purposes only.

INSTRUCTORS' RESPONSIBILITIES

The instructor(s) will, to the best of their ability, ensure that you have the materials, equipment, and items required for completing the learning modules. It is also the responsibility of the instructor to assist you in the learning process and to accomplish the goals of the program. The instructor will also monitor and help to ensure satisfactory process. The instructor will also address any issues that impact the student and program.