

**SOUTHEAST COMMUNITY COLLEGE**  
**MANUFACTURING OCCUPATIONS**  
**WELDING TECHNOLOGY**  
**COURSE SYLLABUS**  
**November 20, 2020**  
[Syllabus Statements](#)

**I. CATALOG DESCRIPTION**

Course Number: WELD1123  
Course Title: GMAW I  
Prerequisite(s): None

Catalog Description: Study of Gas Metal Arc Welding theory, safety, applications, manipulative skills, welding principles, and procedures. Study and use of various filler wires and shielding gases and welding power source set-up. Beginning welding of carbon steel with the Gas Metal Arc Welding process on various joint configurations.

Credit Hours: 3.5  
Classroom Hours: 30  
Laboratory Hours: 68  
Total Contact Hours: 98

**II. COURSE OBJECTIVES:** *Course will:*

- A. Teach the theory of the Gas Metal Arc Welding process.
- B. Teach operation of the Gas Metal Arc Welding process.
- C. Demonstrate the proper setup and operation of the Gas Metal Arc welder and related equipment.
- D. Show the student how to gas metal arc weld carbon steel in the flat and horizontal positions on various types of joints with different modes of transfer.

**III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES**

**A. STUDENT LEARNING OUTCOMES:** *The student will be able to:*

- 1. Identify and set up various types of GMAW power sources and related equipment.
- 2. Weld in the flat and horizontal position on multiple joint designs and material thicknesses using the GMAW short circuit process.
- 3. Perform fillet welds in the flat and horizontal position using the GMAW spray arc method.

**B. GENERAL LEARNING OUTCOME:**

**GELO #3: Critical Thinking & Problem Solving**

**Outcomes:**

- 1. Collect, identify, interpret and analyze data.
- 2. Synthesize information to arrive at reasoned solutions to problems.
- 3. Evaluate ideas presented in writing, medial, speech, or artistic presentations.

4. Evaluate the validity of arguments, alternatives, data, outcomes and/or impacts of actions.
5. Acquire and integrate knowledge and construct relationships across disciplines.

**IV. CONTENT/TOPICAL OUTLINE**

- A. Introduction
- B. History of GMAW
- C. Hazards, safety, and protective equipment
- D. Modes of GMAW transfer
- E. Equipment for GMAW
- F. GMAW variables
- G. Electrode wires
- H. Shielding gases and related equipment
- I. Techniques for GMAW
- J. Setup and operation of GMAW welder/equipment
- K. Show the student how to gas metal arc weld carbon steel in the flat and horizontal positions on various types of joints with different modes of transfer.

**V. INSTRUCTIONAL MATERIALS**

**Required Text(s):** Refer to Course Information Document and/or course instructor for required text(s).

**Other Resources:** Supplemental handouts supplied by instructor.  
 Notebook  
 Tools/Supplies for the 1<sup>st</sup> semester listed on the Welding Technology Program required tool list.

**VI. METHODS OF PRESENTATION/INSTRUCTION**

**A. Methods of presentation typically include a combination of the following:**

1. Lecturing
2. Video presentations
3. Laboratory demonstrations

**VII. METHODS OF EVALUATION**

**A. Methods of evaluation typically include a combination of the following:**

1. Written assignments
2. Written tests and quizzes
3. Class attendance and participation
4. SCC Standard Grading Scale Policy:

A+	–	95 to 100 Points	A	–	90 to 94 Points
B+	–	85 to 89 Points	B	–	80 to 84 Points
C+	–	75 to 79 Points	C	–	70 to 74 Points
F (Failing)–Less than 70 points					

**VIII. SPECIFIC COURSE REQUIREMENTS**

**A. Successful completion of all assignments and exams.**

**B. Grading**

1. It is the students' responsibility to make up work when absent.
2. All assigned work must be turned in on the day due or a late grade will be given (10% deduction each late day).
3. The instructor reserves the right to revise assignments and/or grading scale in accordance to the progress of the class at any time of the quarter.
4. Minimum course grade of C (70 Percent) is required.

**C. Attendance/Classroom Policy**

1. The Attendance Policy, as specified in the Welding Technology Program will be followed.
2. The Classroom/Lab Policy, as specified in the Welding Technology Program will be followed.