SOUTHEAST COMMUNITY COLLEGE
MANUFACTURING OCCUPATIONS
WELDING TECHNOLOGY
COURSE SYLLABUS
September 11, 2023

I. CATALOG DESCRIPTION

Course Number: WELD1220
Course Title: GMAW II
Prerequisite(s): WELD1123

Catalog Description: Advanced welding of carbon steel, stainless steel and aluminum, with the Gas Metal Arc Welding process on various joint configurations.

Credit Hours: 2.5
Classroom Hours: 8
Lab Hours: 90
Total Contact Hours: 98

II. COURSE OBJECTIVES: *Course will:*

- **A.** Give the student the understanding of the safe operation of the Gas Metal Arc Welding process.
- **B.** Give the student the ability to demonstrate the proper setup and operation of the Gas Metal Arc welder and related equipment.
- **C.** Give the student the ability to gas metal arc weld carbon steel in the vertical and overhead positions on various types of joints.
- **D.** Teach the student to weld aluminum on different joints in different weld positions to meet course requirements.
- **E.** Teach the student how to weld stainless steel on different joints in different weld positions to meet course requirements.
- **F.** Teach the student to identify proper weld parameters for welding aluminum and stainless steel.
- **G.** Cover pulse unit on mild steel??? This was suggested. Is this where needs to go???**

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES

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

1. Understand safe operation and setup of GMAW equipment.
2. Demonstrate GMAW Welding on carbon steel, stainless steel and aluminum on a variety of different joints and welding positions.

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/UNIT OF INSTRUCTION

- **A.** Setup of equipment

B. Welding of carbon steel in vertical and overhead positions
C. GMAW on Aluminum
D. Equipment set-up and running stringer beads
E. Fillet weld on a T-joint – horizontal position
F. Fillet weld on a T-joint – vertical position
G. V-groove – vertical position - inverter power source
H. Fillet weld on a lap joint – overhead position
I. GMAW on Stainless Steel
J. Equipment set up and running fillet and groove welds on different joints on mild steel using stainless steel filler metal.
K. Running fillet and groove welds on stainless steel using stainless steel filler metal.

V. INSTRUCTIONAL MATERIALS

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

Other Resources: Supplemental handouts supplied by instructor
Notebook
Tools/supplies 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. Lecture
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

VIII. SPECIFIC COURSE REQUIREMENTS

A. Successful completion of all assignments, exams, and weldments.
B. Grading
1. All weldments must meet a minimum grade of C (70 Percent).
2. It is the students' responsibility to make up work when absent.
3. All assigned work must be turned in on the day due or a late grade will be given (10% deduction each late day).
4. 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.
5. Minimum course grade of C (70 Percent) is required.