SOUTHEAST COMMUNITY COLLEGE | COURSE SYLLABUS

CONTINUING EDUCATION DIVISION

Revision Date: January 5, 2023

Syllabus Statements

I. CATALOG DESCRIPTION

Course Number: **WELD-1000**

Course Title Gas Metal Arc Welding (Steel)

Prerequisite(s): **n/a**

Catalog Description: This is an introduction to Gas Metal Arc Welding theory, safety, applications, welding principles, and procedures. Filler wire, shielding gases, welding power sources, welding of carbon steel, and welding processes on different joint configurations are included.

Credit Hours: 1.5

Class Hours: 12

Lab Hours: **32**

Total Contact Hours: 44

II. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

A. STUDENT LEARNING OUTCOMES: *Student will be able to:*

1. Provide the opportunity for learners to increase their knowledge and develop their skills in Gas Metal Arc Welding on steel.
2. Understand the theory of the GMAW process.
3. Understand the safe operation of the GMAW equipment.
4. Demonstrate the proper setup and operation of the equipment involved in GMAW
5. Arc weld carbon steel in the flat and horizontal positions on various types of joints with different modes of transfer.

III. CONTENT/TOPICAL OUTLINE (course outline may provide more detailed information)

Class 1:

Objectives:

Tour
Policies
Course Overview
Hand out Text Books; Victor Technologies, Miller GMAW
Safety Film

Reading Assignment Victor: Sections 1-4

Class Discussion Lecture and Class Discussion
Demonstration; Safety Exercises

Assignment Lab Oxy-fuel cutting
Exercises 1-2

Class 2:

Objectives: Review of Material from Class 1
Presentation and Class Discussion from Assignment Reading

Reading Assignment Victor: Sections 5, 7, 8, 9

Miller: pages 1-62

Class Discussion Review

Assignment Lab Oxy-fuel cutting
Quiz 1-2

Class 3:

Objectives: Review of Material from Class 2
Presentation and Class Discussion from Assignment Reading

Reading Assignment Miller: pages 1-62

Class Discussion Lecture and Discussion

Assignment Lab Exercises 1-2
Quiz 3-4

Class 4:

Objectives: Review of Material from Class 3
Presentation and Class Discussion from Assigned Reading
Safety Film GMAW

Reading Assignment Miller: pages 1-62, 63-71

Class Discussion	Lecture and Discussion Demonstration
Assignment	Lab Oxy-fuel Test

Class 5:

Objectives:	Review of Material from Class 4 Presentation and Class Discussion from Assigned Reading
Reading Assignment	Miller: pages 1-62, 63-87
Class Discussion	Lecture and Discussion
Assignment	Lab

Class 6:

Objectives:	Review of Material from Class 5 Presentation and Class Discussion from Assigned Reading
Reading Assignment	Miller: pages 63-113
Class Discussion	Lecture and Discussion
Assignment	Lab Quiz #1

Class 7:

Objectives:	Review of Material from Class 6 Presentation and Class Discussion from Assigned Reading
Reading Assignment	Miller: pages 63-113
Class Discussion	Lecture and Discussion
Assignment	Lab

Class 8:

Objectives: Review of Material from Class 7
Presentation and Class Discussion from Assigned Reading

Reading Assignment Miller: pages 63-113

Class Discussion Lecture and Discussion

Assignment Lab
Quiz #2

Class 9:

Objectives: Review of Material from Class 8
Presentation and Class Discussion from Assigned Reading

Reading Assignment Miller: pages 1-113

Class Discussion Lecture and Discussion

Assignment Lab

Class 10:

Objectives: Review of Material from Class 9
Presentation and Class Discussion from Assigned Reading

Reading Assignment Miller: pages 1-113

Class Discussion Lecture and Discussion

Assignment Lab
Quiz #3

Class 11:

Objectives: Review of Material from Class 10

Reading Assignment

Class Discussion Review

Assignment Lab
GMAW Test

Class 12:

Objectives: Review

Reading Assignment

Class Discussion Review

Assignment Lab

IV. INSTRUCTIONAL MATERIALS

A. Required Text(s):

- Miller Electrical Mfg. Co., ***Gas Metal Arc Welding, ESAB Victor Technologies, Oxyfuel cutting and heating handbook.***

B. Other Resources:

- Notebook, writing utensil, safety glasses, leather gloves, arc welding helmet, pliers

VI. METHODS OF PRESENTATION/INSTRUCTION

A. Methods of presentation typically include a combination of the following:
   1. Lecture, Board work, Demos, Lab.

VII. METHODS OF EVALUATION

A. Methods of evaluation typically include a combination of the following:
   1. Question & Answer Sessions, Quizzes, Tests. AWS Visual Inspection criteria on welds and weldments.

SCC STANDARD GRADING SCALE POLICY:

A+	**95-100**	**C+**	**75-79**
A	**90-94**	**C**	**70-74**
B+	**85-89**	**D+**	**65-69**
B	**80-84**	**D**	**60-64**
		F	**Below 60**

VIII. SPECIFIC COURSE REQUIREMENTS:

- The course grade is determined accordingly:
  90 % Quizzes, Final Test
  10% Lab

Successful completion of all assignments, quizzes and weldments
All weldments must meet a minimum grade of C (70%)
A minimum grade of D (60%) is required on quizzes and tests