DATE SUBMITTED  5/21/10
DATE DICC APPROVED  9/2010
CATALOG NO. WELD 151
DATE LAST REVIEWED

COURSE INFORMATION FORM

DISCIPLINE WELD
COURSE TITLE Gas Metal Arc Welding I (MIG) Lab

CR.HR. 2  LECT HR. .5  LAB HR. 3  CLIN/INTERN HR. CLOCK HR. 

CATALOG DESCRIPTION
Student will develop the skills of welding safely and of the gas metal arc welding (GMAW) processes. This includes applying the knowledge of power sources and polarities, principles of operation, welding techniques, modes of filler metal transfer, filler metal identification and use to code welding procedures in all positions with fillet and groove welds, and maintenance of GMAW equipment.

PREREQUISITES
WELD 150 or take concurrently

EXPECTED STUDENT OUTCOMES IN THE COURSE (ESO)
Upon completion of this course, the student will be able to:

1. Demonstrate arc welding safety.
2. Use constant voltage power sources.
3. Select correct welding polarities for given tasks.
4. Apply GMAW principles of operation on carbon steel.
5. Correctly select and use the various modes of filler metal transfer.
6. Use correct GMAW filler materials for various carbon steel applications.
7. Apply GMAW welding techniques on fillet and groove welds.
8. Adapt GMAW procedures to Weld Procedure Specifications and AWS D1.1 code.
9. Make minor repairs to GMAW equipment and accessories

GENERAL EDUCATION OUTCOMES (ESO)
Specify which general education outcomes, if any, are substantially addressed by the course. Numbers in parentheses identify the Expected Student Outcomes linked to the specific General Education Outcome.

Life-Long Learning: Attributes of an Awareness of the Convergence of Knowledge

2. Apply learned skills to real world interactions (1-9)
3. Synthesize information to facilitate application (1,6,8)

Revised 7/10/12
PROGRAM-LEVEL OUTCOMES

CAREER AND TECHNICAL EDUCATION PROGRAM OUTCOMES
Specify which Career and Technical program outcomes, if any, are substantially addressed by the course by completing the “Career and Technical Education template” to show the relationship between course and program outcomes to assessment measures.

The student will demonstrate:

1. critical thinking and problem-solving skills and adapt these skills to welding applications.
2. how they meet or exceed the American Welding Society’s guidelines for entry-level employees in welding technology.

CLASS-LEVEL ASSESSMENT MEASURES
Student accomplishment of expected student outcomes will be assessed using the following measures. (Identify which measures are used to assess which outcomes.)

1. Performance tests (1-9)
Individual instructors may order this outline as fits the needs of their individual courses. In addition, they may place more emphasis on some areas than on others. What is assured is that this particular list is covered in the course. Other topics may be added to a course as the instructor sees fit, and as time and interest allow. An *asterisk can be used to mark an item as optional.

I. Arc welding safety
   A. Electrical
   B. Other potential hazards

II. Power sources
    A. Constant voltage
    B. Polarities
    C. Maintenance of equipment

III. Principles of operation
     A. Welding techniques
     B. Troubleshooting problems

IV. GMAW filler materials
    A. Identification
    B. Proper use

V. Code welding
    A. AWS D1.1 structural steel
    B. Weld Procedure Specifications