COURSE INFORMATION FORM

DISCIPLINE WELD
COURSE TITLE Gas Tungsten Arc Welding I (TIG) 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 the gas tungsten arc welding (GTAW) processes. This includes applying the knowledge of power sources and polarities, principles of operation, welding techniques, electrode identification and use, filler metal identification and use, code welding, and maintenance of GTAW equipment and accessories.

PREREQUISITES
WELD 160 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 current power sources.
3. Select correct welding polarities for given tasks.
4. Apply GTAW principles of operation on carbon steel, stainless steel, and aluminum.
5. Use correct GTAW electrodes for carbon steel, stainless steel, and aluminum.
6. Use correct GTAW filler metals for carbon steel, stainless steel, and aluminum.
7. Apply GTAW welding techniques on fillet and groove welds.
8. Adapt GTAW procedures to Weld Procedure Specifications and AWS D1.1, AWS D1.2, and AWS D1.6 code.
9. Make minor repairs to GTAW 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 (1,5,6,8)
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. the ability to develop critical thinking and problem-solving skills and adapt these skills to welding applications.
2. the ability to graduate individuals with skills that 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 current
   B. Polarities
   C. Maintenance

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

IV. GTAW electrodes
    A. Identification
    B. Proper use

V. GTAW filler materials
    A. Identification
    B. Proper use

VI. Code welding
    A. AWS D1.1 structural steel
    B. AWS D1.2 aluminum
    C. AWS D1.6 stainless steel
    D. Weld Procedure Specifications