### COURSE INFORMATION FORM

<table>
<thead>
<tr>
<th>DISCIPLINE</th>
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<tr>
<td>COURSE TITLE</td>
<td>Welding Industry Fundamentals</td>
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<td>LECT HR</td>
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### CATALOG DESCRIPTION

Student will develop an awareness of the welding industry. Emphasis will be placed on American Welding Society (AWS) welding codes and standards as they relate to the construction, fabrication and maintenance industry.

### PREREQUISITES

None

### EXPECTED STUDENT OUTCOMES IN THE COURSE (ESO)

Upon completion of this course, the student will be able to:

1. Prepare time or job cards, reports or records.
2. Perform housekeeping duties.
3. Apply verbal and written instructions to complete work assignments.
4. Demonstrate proper use and inspection of personal protection equipment (PPE) and proper safe operation practices.
5. Identify and describe the proper use and inspection of ventilation equipment.
6. Demonstrate proper HotZone operation.
7. Identify and describe proper work actions for working in confined spaces.
8. Identify and describe potential fall hazards and prescribe preventative measures.
9. Identify and describe the different classes of fires and fire extinguisher use.
10. Demonstrate proper use of precautionary labeling and Material Safety Data Sheets (MSDS) information.
11. Demonstrate proper inspection and operation of equipment used for each welding and thermal cutting process.
12. Locate essential welding information from a code or other standard.
14. Identify and describe the fundamental principles related to welding metallurgy.
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.

Critical Thinking: Define, Analyze and Evaluate Information, Materials and Data
3. Unambiguously define problems and issues (12)

Life-Long Learning: Personal and Professional Development
3. Seek and participate in special interest groups and professional organizations (13)
4. Pursue structured learning opportunities, certification and/or degrees (13)

Life-Long Learning: Attributes of an awareness of the convergence of knowledge
2. Apply learned skills to real world interactions (1 – 13)

Quantitative Literacy and Mathematical Analysis
E. Interpret and apply numeric information embedded in text or real-life situations (10)

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. academic competency in welding operations.
2. professional employability skills as applied to a welding environment.

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. Written assignments (1, 3, 10)
2. Formative and summative tests (5, 7, 8, 9, 11, 12 13, 14)
3. Observations (2, 3, 4, 6, 10, 11)
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. Occupational Orientation
   A. Reports, records and other forms
   B. Work Assignments
II. Safety and Health of Welders
    A. Personal Protective Equipment (PPE)
    B. Equipment safety
    C. Ventilation
    D. Hot zones
    E. Confined Spaces
    F. Fall hazards
    G. Fires and fire extinguishers
    H. Material Safety Data Sheets (MSDS)
III. Welding Inspection
     A. Welding codes
     B. Welding qualifications
     C. Welding certifications
IV. Welding Metallurgy
    A. Principles of welding metallurgy
    B. Principles of metal properties
    C. Principles of metal stress and distortion