COURSE INFORMATION FORM

DISCIPLINE: WELD
COURSE TITLE: Thermal Cutting Processes Lab

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

CATALOG DESCRIPTION:
Student will develop the skills required to be proficient in the thermal cutting processes. The emphasis will be on manual and mechanized oxy-fuel cutting (OFC), plasma arc cutting (PAC), and air-carbon arc cutting (CAC-A).

PREREQUISITES
WELD 120 or take concurrently

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

1. Perform safety inspections of manual and mechanized OFC, plasma, and carbon arc equipment and accessories.
2. Make minor external repairs to manual and mechanized OFC, plasma, and carbon arc equipment and accessories.
3. Set up and operate manual and mechanized OFC, plasma, and carbon arc operations safely and efficiently.
4. Use manual and mechanized OFC, plasma, and carbon arc, perform square edge straight and shape cutting operations.
5. Use manual and mechanized OFC, plasma, and carbon arc, perform straight, bevel edge cutting operations.
6. Use manual OFC, plasma, and carbon arc, perform hole piercing and circle cutting operations.
7. Perform scarfing and gouging operations with manual OFC and carbon arc to remove base and weld metal.

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 (1-7)

Quantitative Literacy and Mathematical Analysis
F. Interpret and apply numeric information presented in tables, charts, and graphs (3)
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. the ability to 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 (1-7)
COURSE OUTLINE FORM

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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. Manual Oxy-fuel Gas Cutting (OFC)

   A. Safety inspection and repair to manual OFC equipment and accessories
   B. Set up and operate manual OFC operations on carbon steel
   C. Straight and pattern cutting operations, in the flat position, on carbon steel
   D. Straight, bevel edge cutting operations, in the flat position, on carbon steel
   E. Scarfing and gouging operations to remove base and weld metal, in the flat and horizontal positions, on carbon steel

II. Mechanized Oxy-fuel Gas Cutting (OFC)

   A. Safety inspection and repair to mechanized OFC equipment and accessories
   B. Set up and operate mechanized OFC operations on carbon steel
   C. Straight, square edge and bevel cutting operations in the flat position, on carbon steel

III. MANUAL PLASMA ARC CUTTING (PAC)

   A. Safety inspection and repair to manual PAC equipment and accessories
   B. Set up and operate manual PAC operations on carbon steel, austenitic stainless steel, and aluminum
   C. Straight and pattern cutting operations, in the flat position, on carbon steel, austenitic stainless steel, and aluminum

IV. MANUAL AIR CARBON ARC CUTTING (CAC-A)

   A. Safety inspection and repair to manual CAC-A equipment and accessories
   B. Set up and operate manual CAC-A scarfing and gouging operations on carbon steel
   C. Scarfing and gouging operations to remove base and weld metal, in the flat and horizontal positions, on carbon steel