WELD 120 Course Outline as of Summer 2007

CATALOG INFORMATION

Dept and Nbr: WELD 120 Title: CUTTING METALS
Full Title: Cutting Ferrous and Non-ferrous Metals
Last Reviewed: 11/20/2006

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	0.50	Lecture Scheduled	0.50	8	Lecture Scheduled	4.00
Minimum	0.50	Lab Scheduled	1.50	8	Lab Scheduled	12.00
		Contact DHR	0		Contact DHR	0
		Contact Total	2.00		Contact Total	16.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 8.00 Total Student Learning Hours: 24.00

Title 5 Category:	AA Degree Applicable
Grading:	Grade or P/NP
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:	
Formerly:	

Catalog Description:
Hands-on experience with plasma cutting, oxy-acetylene cutting, and air-arc gouging of ferrous and non-ferrous metals. Intended for industrial applications.

Prerequisites/Corequisites:

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:
Description: Hands-on experience with plasma cutting, oxy-acetylene cutting, and air-arc gouging of ferrous and non-ferrous metals. Intended for industrial applications. (Grade or P/NP)
Prerequisites/Corequisites:
Recommended:
Limits on Enrollment:
Transfer Credit:
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**	Effective:	Inactive:
CSU GE:	**Transfer Area**	Effective:	Inactive:
IGETC:	**Transfer Area**	Effective:	Inactive:

CSU Transfer:	Effective:	Inactive:
UC Transfer:	Effective:	Inactive:

CID:

Certificate/Major Applicable:
Certificate Applicable Course

COURSE CONTENT

Outcomes and Objectives:
Upon completion of this course, the student will be able to:
1. Demonstrate proper welding safety.
2. Set up and shut down various welding equipment.
3. Differentiate between ferrous and non-ferrous metals.
4. Describe applications for plasma cutting, oxy-acetylene cutting, and air-arc gouging.
5. Use plasma cutting, oxy-acetylene cutting, and air-arc gouging to make cuts to ferrous and non-ferrous metals.

Topics and Scope:

I. Introduction
   A. Overview and comparison of processes
      1. Plasma cutting
      2. Oxy-acetylene cutting
      3. Air-arc gouging
   B. Tools and equipment
   C. Safety
   D. Speed and quality
   E. Most common industrial applications
   F. Materials appropriate to each process
II. Oxy-acetylene Cutting
   A. Lecture
      1. Safety
      2. Gases
      3. Tanks
      4. Torches
      5. Accessories
      6. Applications
      7. Ferrous and non-ferrous metals
   B. Lab

1. Setting up and shutting down equipment
2. Cutting
   a. Straight line cuts
   b. Circles
   c. Bevels
   d. Changing cutting direction
   e. Free-form cutting
   f. Stack cutting

III. Plasma Cutting
   A. Lecture
      1. Safety
      2. Gases
      3. Tanks
      4. Torches
      5. Accessories
      6. Applications
      7. Ferrous and non-ferrous metals
      8. Stack cutting production methods
   B. Lab
      1. Setting up and shutting down equipment
      2. Cutting
         a. Straight line cuts
         b. Circles
         c. Bevels
         d. Changing cutting direction
         e. Free-form cutting
         f. Stack cutting

IV. Air-arc Gouging
   A. Lecture
      1. Safety
      2. Gases
      3. Tanks
      4. Torches
      5. Accessories
      6. Applications
         a. New fabrications
         b. Salvage and repair
      7. Ferrous and non-ferrous metals
   B. Lab
      1. Setting up and shutting down equipment
      2. Groove cutting
      3. Weld removal
      4. Full penetration
      5. Joint preparation
      6. Back gouging

V. Economics of Processes
   A. Cost of set-ups
   B. Production speed
   C. Purchasing equipment

Assignment:

Representative assignments:
1. Notebook of class notes and handouts.
2. Equipment set-up and shut down.
3. Cutting projects--samples of each process (4-6 total).
4. Final project: manipulate a cutting course to result in a given shape.

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because skill demonstrations are more appropriate for this course.	Writing 0 - 0%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

None	Problem solving 0 - 0%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Equipment set up and shut down; cutting projects	Skill Demonstrations 80 - 90%

Exams: All forms of formal testing, other than skill performance exams.

None	Exams 0 - 0%

Other: Includes any assessment tools that do not logically fit into the above categories.

Notebook	Other Category 10 - 20%

Representative Textbooks and Materials:
Instructor prepared materials.