

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.