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Welding (WELD) 1560 Blueprint Reading (3 Units) CSU

Prerequisite: Successful completion in Welding 1500, Industrial Education Welding 0001, 1001, or 1002 with a grade of “C” or better

Prerequisite knowledge and skills: Before entering the course, the student should be able to

1. understand the principles of safe work habits as related to oxy-fuel welding and cutting and the various electric arc welding processes,
2. set up oxy-fuel welding and cutting equipment,
3. braze and solder ferrous and non-ferrous alloys,
4. apply understanding of the common welding processes, utilizing proper safety and technique [Shielded Metal Arc (SMAW), Gas Metal Arc Welding (GMAW), Flux-Cored Arc Welding (FCAW) and Gas Tungsten Arc Welding (GTAW)].

Total Hours: 48 hours lecture

Catalog Description: This course will cover certain key principles and practices of reading and interpreting basic industrial blueprints as applied to the welding trade. This course has a material fee.

Type of Class/Course: Degree Credit

Text: Bennet, A.E, and Louis J. Siy. *Blueprint Reading for Welders*. 8th ed. New York: Delmar, Cengage Learning, 2009. Print.

Additional Instructional Materials: None

Course Objectives:

By the end of the course, a successful student will be able to:

1. explain the welding concepts, principles, and application, and
2. demonstrate understanding of welding blueprint reading in related situations and projects.

Course Scope and Content:

Unit I Blueprint Reading for Welders' Introduction

A. Overview and Purpose

- Unit II Lines, Views, and Sketching
 - A. Basic Lines
 - B. Basic Views
 - C. Purpose of Sketching
 - D. Basic Sketching Techniques

- Unit III Dimensions
 - A. Purpose
 - B. Types of Dimensions

- Unit IV Bill of Materials, Structural Shapes, Views, and Sections
 - A. Preparation of a Bill of Materials
 - B. Common Structural Shapes
 - C. Types of Views
 - D. Types of Sections

- Unit V Detail and Assembly
 - A. Detail Drawing
 - B. Assembly Print

- Unit VI Welding Symbols
 - A. Welding Symbols
 - B. Location of Symbols
 - C. Elements
 - D. Dimension of Symbols
 - E. Various Application

- Unit VII Basic Joints and Weld Types
 - A. Basic Joints
 - B. Other Kinds of Joints
 - C. Weld Types and Purposes

- Unit VIII Metrics
 - A. Applied Metrics

- Unit IX Other Welding Symbols
 - A. Pipe Welding Symbols
 - B. International Standard Symbols for Welding

- Unit X Inspection and Testing

- A. Overview
- B. Destructive Testing
- C. Non Destructive Examination

Learning Activities Required Outside of Class:

The students in this class will spend a minimum of 6 hours per week outside regular class time doing the following:

1. Completing assigned readings from the text
2. Analyzing various blueprint explanation, sketches, drawings, etc to determine applicability, length, size, extent, contour, finishing
3. Completing other the necessary assignments
4. Preparing for code testing

Methods of Instruction:

1. Lecture
2. Individual and group work
3. Class discussion and participation
4. Power Point presentations
5. Demonstration

Methods of Evaluation:

1. Class participation
2. Grading scale specified in syllabus
3. Exams and quizzes
4. Observation
5. Written assignments