

SAN DIEGO COMMUNITY COLLEGE DISTRICT
CONTINUING EDUCATION
COURSE OUTLINE

SECTION I

SUBJECT AREA AND COURSE NUMBER

INDT 401

COURSE TITLE

INDUSTRIAL BLUEPRINT READING

TYPE COURSE

NON-FEE

VOCATIONAL

CATALOG COURSE DESCRIPTION

Designed for industrial metal trades including aerospace, ship construction and component fabrication. Primarily blueprint interpretation and sketching of basic components. Includes the identification and use of basic lines, projections, dimensions, reference and technical data. Workplace skills including math, communications and business ethics are integrated into the curriculum. Students successfully completing this course will be prepared for entry-level or better positions. (FT)

LECTURE/LABORATORY HOURS

54

ADVISORIES

NONE

RECOMMENDED SKILL LEVEL

Students should be able to read, interpret and communicate orally in English at a 12th grade level; able to do computations of mathematics at a 12th grade level; High School Diploma or GED recommended.

INSTITUTIONAL STUDENT LEARNING OUTCOMES

1. Social Responsibility
SDCE students demonstrate interpersonal skills by learning and working cooperatively in a diverse environment.
2. Effective Communication
SDCE students demonstrate effective communication skills.

INSTITUTIONAL STUDENT LEARNING OUTCOMES (CONTINUED)

3. Critical Thinking
SDCE students critically process information, make decisions, and solve problems independently or cooperatively.
4. Personal and Professional Development
SDCE students pursue short term and life-long learning goals, mastering necessary skills and using resource management and self-advocacy skills to cope with changing situations in their lives.

COURSE GOALS

To provide the student with the technical skills and practices to read and interpret industrial metal trades blueprints to the standards of the American National Standards Institute (ANSI) and the American Society of Mechanical Engineers (ASME). In addition, the course will enhance the student's workplace skill's including math, communications, business ethics etc., necessary to succeed in the industrial field. Upon successful completion of the course objectives, the student will be prepared for entry level or greater employment as an Industrial Blueprint reader and will be able to:

1. Demonstrate a basic knowledge of sketching and blueprint interpretation as it applies in the metal manufacturing processes in industry.
 - 1.1. Identifying basic lines.
 - 1.2. Identifying basic projections.
 - 1.3. Sketching basic components.
 - 1.4. Identifying and using basic information on a drawing.
 - 1.5. Interpreting blueprints.
2. Demonstrate the ability to use reference materials and technical data in the interpretation of blueprints and specifications as it applies in industry.
 - 2.1. Identifying reference materials on a blueprint.
 - 2.2. Identifying symbols on a blueprint.
 - 2.3. Identifying specifications on a blueprint.
 - 2.4. Use of reference materials.

COURSE OBJECTIVES

Upon successful completion of the course, the student will be able to perform reading and interpret Industrial Blueprints drawn to the standards ANSI/ASME.

1. Demonstrate the ability to identify, define, and utilize the basic lines found on Industrial blueprints measured within 70% accuracy through written exams.
2. Demonstrate the ability to identify, define and utilize the basic projection methods found on industrial blueprints, measured within 70% accuracy through written exams.
3. Demonstrate the ability to identify, define and utilize the basic dimensioning methods found on industrial blueprints, measured within 70% accuracy through written exams.

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COURSE OBJECTIVES (CONTINUED)

4. Identify the basic components of an industrial blueprint including title block, reference block, revision block, general notes and list of materials measured within 70% accuracy through written exams.
5. Demonstrate the ability to interpret basic industrial blueprints and specifications, utilizing reference and technical data measured within 70% accuracy through written exams.

SECTION II

COURSE CONTENT AND SCOPE

1. Introduction to Course
2. Basic Lines
3. Basic Projection Methods
4. Basic Dimensioning Methods
5. Basic Material Shapes
6. Basic Shapes
7. Section Views
8. Auxiliary Views
9. Alignment Views
10. Detail and Assembly Drawings
11. Developed Drawings
12. Pipe Drawings
13. Material Specifications/Fasteners
14. Welding/Not Symbols
15. Review/Midterm/Final
16. Guest speaker/Field Trip (Upon Availability)

Business procedures and customer relations including business conduct and ethics, math, oral and written communications, job/work orders, job scheduling and phone skills are integrated into course.

Math review for course will cover the following areas: Addition, Subtraction, Multiplication and Division of Whole Numbers, Fractions and Decimals; Liquid and Dry Measurements; Simple Algebraic Expressions; Geometric Expressions and Functions; Ratios; Degrees and Angles; Percentages; Volume Measures; Weight and Mass.

APPROPRIATE READINGS

AWS Welding Journal (<http://www.aws.org>)

Modern Steel Construction (<http://www.modernsteel.com>)

Walls & Ceilings (<http://www.wconline.com>)

The Tubing and Piping Journal Stamping Journal, Hydroforming Journal

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WRITING ASSIGNMENTS

Typical writing assignments may include: completing assigned reports, providing written answers to assigned questions, performing arithmetic calculations as assigned and completing shop and/or job orders.

OUTSIDE ASSIGNMENTS

Students are expected to spend a minimum of one hour per day outside of class in practice OUTSIDE ASSIGNMENTS (CONTINUED)

and preparation for each day in class. Appropriate assignments may include, but are not limited to: appropriate readings, preparing research reports, preparing appropriate writing assignments and studying as needed to perform successfully in class.

APPROPRIATE ASSIGNMENTS THAT DEMONSTRATE CRITICAL THINKING

Students will perform analysis and evaluation of reading and/or classroom materials and utilize this analysis in classroom discussions, writing assignments, and in performing laboratory activities. Students must select and use appropriate methods and materials needed to complete laboratory assignments.

EVALUATION

A student's grade will be based on multiple measures of performance. The assessment will measure development of independent critical thinking skills and will include evaluation of the student's ability to:

1. Demonstration of instruction given to the student throughout the course. (10%)
2. Oral and/or written quiz after each topic. (25%)
3. Midterm and Final exams (Identify and fill in type questions). (30% each)
4. Attendance will be counted into final grade. (5%)
5. Grade is not accomplished utilizing a curve.

The student will receive an evaluation at the end of each module or when requested by the student. A grade point average of 2.0 or letter grade C or better must be achieved for satisfactory completion.

Upon satisfactory completion of all modules, a Certificate of Completion will be issued.

NOTE: If a student's goal is to complete one or more of the individual modules, with the instructor approval, upon completion of that module(s), a Certificate of Achievement may be issued.

METHOD OF INSTRUCTION

Methods of instruction will include, but are not limited to, lectures, demonstrations, laboratory, audio-visual presentations, and computer assisted instruction. Group and individual

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instruction. Field trips, job shadowing and internships may be utilized.

TEXTS AND SUPPLIES

The instructor will provide a course syllabus and relevant handouts

Required text:

Print Reading for Industry, Brown and Brown

Supplies:

Pen/pencil

Notebook

PREPARED BY: W. P. Borinski (ECC) DATE: March 9, 1988

REVISED BY: Dennis Horn DATE: 05/08/02

REVISED BY: Instructional Services, SLOs added DATE: March 8, 2017

Instructors must meet all requirements stated in Policy 3100 (Student Rights, Responsibilities and Administrative Due Process), and the Attendance Policy set forth in the Continuing Education Catalog.

REFERENCES:

San Diego Community College District Policy 3100
California Community Colleges, Title 5, Section 55002
Continuing Education Catalog

