

**PALOMAR COLLEGE**  
**COURSE OUTLINE OF RECORD FOR**  
**DEGREE CREDIT COURSE**

Transfer Course  A.A. Degree Applicable Course  
(check all that apply)

**COURSE NUMBER AND TITLE:** DT 115      Machine Blueprint Reading

**UNIT VALUE:** 2

**MINIMUM NUMBER OF SEMESTER HOURS:** 32

**BASIC SKILLS REQUIREMENT:** Appropriate language and computational skills.

**ENTRANCE REQUIREMENTS:**

**PREREQUISITES:** None

**COREQUISITES:** None

**RECOMMENDED PREPARATION:** None

**SCOPE OF COURSE:**

The application of principles of orthographic projection, standard symbols, dimensioning, sectional views, and auxiliary views in the interpretation of working drawings for the machine trades.

**SPECIFIC COURSE OBJECTIVES:**

Successful students will be able to:

1. Analyze sketches of various projects in cabinetwork and millwork.
2. Analyze and solve problems related to different types of drawings used in the cab/mill trades and.
3. Identify and describe cabinet/millwork/construction design and construction methodology.
4. Apply principles of drawing and specifications to a simple cabinet/millwork project .

## **CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:**

- I. Basis for Interpreting Drawings
  - A. Orthographic Projection
  - B. Primary Dimensions
    - 1. Height
    - 2. Width
    - 3. Depth
  - C. Isometric Projection
  - D. Lines in Drawings
- II. Dimensioning
  - A. Units of Measure
  - B. Choice of Dimensions
  - C. Basic Rules of Dimensioning
  - D. Tolerances and Allowances
- III. Measurements in Drawings
  - A. Inclined Planes
  - B. Round Shapes
  - C. Rounds and Fillets
- IV. Scales
  - A. Architects
  - B. Engineering
  - C. Mechanical Draftsmans
- V. Machining Symbols
  - A. Finish Marks
  - B. Rough Casting Marks
  - C. Prohibited Removal of Material Symbols
  - D. Not to Scale Dimensions
- VI. Sectional Views
  - A. Full Sections
  - B. Half Sections
  - C. Removed and Revolved Sections
- VII. Surface Texture and Smoothness Definitions and Symbols
  - A. Microinch
  - B. Micrometer
  - C. Roughness and Roughness Height and Width
  - D. Waviness
- VIII. Fasteners and Keyways
  - A. Threads
    - 1. Internal
    - 2. External
  - B. Head Types
  - C. Class of Fits
  - D. Key Types

1. Square
  2. Flat
  3. Woodruff
- IX. Auxiliary Views
- A. True Size and Shape of Inclined Planes
  - B. True Size and Shape of Skewed Planes
- X. Development Drawings
- A. Joints, Seams, and Edges
  - B. Thin Gage Sheetmetal Patterns
- XI. Drawing and Manufacturing Standards
- A. Simplified Drafting
  - B. Alignment of Parts and Holes
  - C. Assembly Drawings
- XII. Structural Steel Drawings
- A. Welding Symbols
  - B. Structural Steel Shapes
- XIII. Methods of Manufacture
- A. Machine Tools
  - B. Casting

**REQUIRED READING:**

Jensen, H. Interpreting Engineering Drawings. 3<sup>rd</sup> ed. Albany, NY: Del Mar Publishers, 1984.

**SUGGESTED READING:** None.

**REQUIRED WRITING:**

A minimum of 20 drawing analysis worksheets. A paper on a common method of manufacture of at least one page in length.

**OUTSIDE ASSIGNMENTS:**

**Students are expected to spend a minimum of three hours per unit per week in class and on outside assignments, prorated for short term classes.**

Library readings from various industrial journals applied to the subject which will entail two hours for every hour in class.

## **INSTRUCTIONAL METHODOLOGY:**

**Check all that apply:**

- lecture  
 laboratory  
 lecture-laboratory combination  
 directed study

**This course may be offered as a distance education course and meets Title 5 regulations 55370, 55372, 55374, 55376, 55378, and 55380.**

Yes  No

**If yes, check all that apply:**

- telecourse  
 mediated instruction  
 computer assisted instruction

**GRADING POLICY AND STANDARDS** (include methods for determining whether the stated objectives have been met by students):

- 60% Weekly or biweekly assignments are submitted and evaluated based on previously provided material information and criteria.  
25% Two midterm examinations on approximately the sixth and the twelfth weeks of the course testing for the general knowledge of material studied in that interim.  
15% A final examination including a written project demonstrating the skills and knowledge developed through study and work in the course.

**IS COURSE REPEATABLE FOR REASON(S) OTHER THAN DEFICIENT GRADE?**

Yes  No Number of times course may be taken for credit: 1.

If yes, identify specific provision of Title 5 Division 2 section(s) 55761-55763 and 58161 which qualifies course as repeatable:

**CONTACT PERSON:** Ken Swift Ext. 2559