



Blueprint Reading

Teaching Plan

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Subject/Module Title	Subject length in hours
Blueprint Reading	[36]

Blueprint Reading provides students with flexible courseware and instruction that enables them to understand the various types of blueprints, shop prints and schematics used in an industrial environment. Learning to read blueprints, trainees discover how to comprehend, and interpret the different types of standard symbols and abbreviations found on engineering drawings. They'll learn to: define different types of scales used on drawings; identify the height, width, and length dimensions of a drawing; interpret the various symbols and notations used on drawings; draw multiview sketches of simple objects that accurately show all the details of the objects.

Textbooks/manuals

1. A. Kubba. Blueprint Reading, ISBN 9780071549868, McGraw Hill

Method of Evaluation

(e.g., graded homework, quizzes, projects, final examination, et cetera; the type, number, and % value of each)

Туре	Number	% Value	Туре	Number
Quiz	2	40 %	Graded Homework	10 %
Final Exam	1	50 %		

Teaching Method		Location
Method	Number of hours	Classroom/Lab (College)
	36	campus)
Computer Based Learning		
Supervised Lab (e.g., computers)		
Distance Education		

Does the subject require a final examination or formal evaluation?

Yes No If "Yes", indicate the Pass mark: 50%

Objectives Attach additional sheets if required

Knowledge (the key elements that a student is expected to know upon the completion of subject)

Core Competency: [(Knowledge) - #23]: Know how to generate a drawing from model and annotate consistently according to specifications of particular drafting standards

- 1. Understand in general terms the design process and the role of design professionals.
- 2. Examine the function and use of various types of drawings.
- 3. Have a knowledge in major Standards
- 4. Differentiate between notes and specifications.
- 5. Know how to build title blocks, revision blocks, release blocks, and tolerance blocks.

Core Competency: [(Knowledge) - #24]: Know about basic dimensions and tolerances, including Geometric Dimensioning and Tolerance

- 1. Know how to use different type of Dimensions.
- 2. Understand the difference between Dimensions Formats.
- 3. Differentiate between Dimensional and Geometric Tolerance

Core Competency: [(Knowledge)] - #25]: Design and maintain electronic filing system

1. Know how to create and manage electronic files.

Skill (the key behaviors that a student is expected to be able to perform upon the completion of subject)

Core Competency: [(Skills)] - #22]: Visualize manufacturing procedures based on Dimensioning and Tolerance symbology used

- 1. Demonstrate proficiency in dimensioning techniques
- 2. Be able to use the various methods of indicating a feature size and understand the importance of creating limits for feature sizes.

Core Competency: [(Skills)] - #23]: Apply drafting standards to annotate a drawing consistently

- 1. Be able to summarize the standards used to create drawings and units of measurement.
- 2. Demonstrate proficiency in using and interpretation of symbols associated with fields pertaining to manufacturing

Core Competency: [(Skills)] - #24]: Create views using proper conventions, placement, and alignment

- 1. Be able to visualize shapes and objects in multiple views.
- 2. Be able to use all types of views on a blueprint.

Core Competency: [(Skills)] - #25]: Design and maintain electronic filing system

1. Be able to create and manage electronic files.

Subject Weekly Calendar

CALENDAR	Main Topic Sub-Topics
Week 1	 LECTURE 1: BASES FOR INTERPRETING DRAWINGS <u>Drawing Standards</u> ISO and ANSI Drawing Standards. Alphabet of Lines. Drawing Notes. Drawing Scales. Title Block. Revision Table. [(Knowledge: #23-3,4,5), (Skills: #23-1)]
Week 2	 2) LECTURE 2: DRAWINGS VIEWS <u>Drawing Views.</u> Principle of Orthographic Projection. Arrangement of Views. First and Third Angle projections. ISO and ANSI projection symbols. Orthographic Views. Section Views. Partial Views. Detail Views. Isometric Views. [-(Knowledge: #23-2), -(Skills: #24-1,2)]
Week 3	3) LECTURE 3: ELECTRONIC DRAWING FILE MANAGEMENT Electronic Drawing File Management Introduction of electronic file management, Tips of good file management (Knowledge: #25-1), -(Skills: #25-1)], Create folder, file and shortcut. Filename Extensions. Hierarchical Structure of Directories [(Knowledge: #25-1), -(Skills: #25-1)]
Week 4	4) LECTURE 4: DIMENSIONING FORMATS <u>Dimension Formats</u> Metric system and Decimal format, Imperial System, Fractional Format and Decimal Inches [-(Knowledge: #24-1,2), -(Skills: #22-1)]
Week 5	 5) LECTURE 5: ELEMENTS OF DIMENSION Elements of Dimension Positional Dimensioning. Dimensioning methods. Dimensional Tolerance. [- (Knowledge: #24-3), -(Skills - #22-2)] QUIZ #1
Week 6	6) LECTURE 6: SURFACE AND FINISHES SYMBOLS <u>Surface Roughness and Surface Texture.</u> Roughness Average. Surfaces Roughness Chart. Surface Texture Terminology. Surface Texture Symbols. Measuring Surface Texture. [-(Knowledge: #23-1), -(Skills - #23-2)]
Week 7	7) LECTURE 7: THREAD AND FINISHES <u>Finishes and Protective Coatings.</u> Conversion Coating. Electroplating. Flame Spray Coating. Finishes Symbols. [-(Knowledge: #23-1), -(Skills - #23-2)] <u>Threaded Fasteners.</u> Screws. Bolts. Nuts. Washers. [-(Knowledge: #23-1)]
Week 8	8) LECTURE 8: SCREW THREADS AND PIPE THREADS <u>Screw Threads. Pipe Threads</u> Screw Thread Terminology, Specifications, Series. American National Standard Pipe Threads. Tapered Pipe Threads. Representation and Specification of Thread. [-(Knowledge: #23-1), -(Skills - #23-2)]

CALENDAR	Main Topic Sub-Topics
Week 9	 P) LECTURE 9: WELDMENTS Welding Joints. Types of Welds [-(Knowledge: #23-1)] <u>Welding Symbols.</u> [-(Skills: #23-2)] Reference Lines and Arrow. Basic Weld Symbols. Tails. Location of Welding Symbols. QUIZ #2
Week 10	10) LECTURE 10: STRUCTURAL STEEL SHAPES AND IDENTIFYING STEELS AISI and SAE Systems and Specifications [-(Knowledge: #23-1)] Shape Designations [-(Skills - #23-2)]
Week 11	 11) LECTURE 11: INDUSTRIAL SITE VISIT Site visit will be arranged for one of the industrial companies or industrial engineering laboratory
Week 12	12) LECTURE 12: FINAL EXAM Final exam