Industrial Print Reading

Course Structure: Module 1 & Module 2

MODULE 1

Topic Unit One: Introduction to Print Reading (timeline)

1. Definition of a print
2. Types of prints
3. Six steps to reading a print

Lab/Project ____

Topic Unit Two: Alphabet of Lines (timeline)

1. Types
    i. Object line
    ii. Hidden line
    iii. Centre line
    iv. Extension line
    v. Dimension line
    vi. Phantom line
    vii. Cutting plane line
    viii. Viewing line
    ix. Short break line
    x. Long break line
2. Application
3. Identification

Lab/Project ____

Topic Unit Three: Scales (timeline)

1. Definition of a scale
2. Difference between a scale and a rule
3. Different types of scales
4. Usage of scales
5. Conversion of Metric and English Measurements

Lab/Project ____

Industrial Print Reading

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Topic Unit Four: Sketching (timeline)

1. Definition of sketching
2. Types of sketching
    i. Orthographic
    ii. Pictorial
        1) Axonometric
            a. Diametric
            b. Trimetric
            c. Isometric
    iii. Oblique
        1) Cabinet
        2) Cavalier
    iv. Perspective
        1) Perspective one
        2) Perspective two
        3) Perspective three

Lab/Project ____
Final Exam/Lab/Project ____

Topic Unit Five: Multiviews (timeline)

1. Principle planes of projection
    i. Frontal
    ii. Horizontal
    iii. Profile
2. Planes of Projection
    i. 6 or more
3. Glassbox Method or Transparent Method
4. Projection
5. Lines and Surfaces
    i. Normal
    ii. Incline
    iii. Oblique
6. Rounds, Fillets, Run-outs
7. Types of Holes
    i. Counterbore
    ii. Spotface
    iii. Countersink
    iv. Tapered
    v. Blind
    vi. Simple

Lab/Project ____

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Topic Unit Six: Assemblies (timeline)

1. Definition
2. Purpose
3. Types
    i. Sub-assemblies/components
    ii. Standard and non-standard parts
4. Title Block
5. Revision Schedule
6. Bill of material
7. Tolerance schedule
8. Borders

Lab/Project ____

Topic Unit Seven: Auxiliary Views (timeline)

1. Definition
2. Purpose
3. Types
    i. Primary
    ii. Secondary
    iii. Successive
    iv. Full
    v. Partial
    vi. Top view auxiliary view
    vii. Front view auxiliary view
    viii. Side view auxiliary view

Lab/Project ____
Final Exam/Lab/Project ____

Industrial Print Reading

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MODULE 2

Topic Unit Eight: Section Views (timeline)

1. Definition
2. Purpose
3. Types
   i. Full section
   ii. Offset section
   iii. Half section
   iv. Revolve section
   v. Aligned
   vi. Broken out
   vii. Removed
4. Elements of Sectioning
   i. Cutting plane line
   ii. Section line
   iii. Labelling
   iv. Arrowheads
5. Features that are not Section Line
   i. Holes
   ii. Slots
   iii. Key ways
   iv. Spokes
   v. Gear teeth
   vi. Webs
   vii. Ribs

Lab/Project ____

Industrial Print Reading

Course Structure: Module 1 & Module 2

Topic Unit Nine: Dimensioning for Manufacturing (timeline)

1. Definition
2. Purpose
3. Importance
4. Elements
    i. Extension lines
    ii. Centre lines
    iii. Dimension lines
    iv. Arrowheads
    v. Leaders
5. Systems of Dimensions
    i. Aligned
    ii. Uni-directional
6. Notes
    i. General
    ii. Specific
    iii. Thread Callout
    iv. Representation
        1) Schematic
        2) Simplified
        3) Detail

Lab/Project ____

Industrial Print Reading

Course Structure: Module 1 & Module 2

Topic Unit Ten: GD&T (Geometric Dimensioning and Tolerancing)

1. Definition
2. Datum
3. Geometric Control Characteristics
    i. Form
        1) Straightness
        2) Flatness
        3) Circularity (Roundness)-
        4) Cylindricity
    ii. Profile
        1) Of a Line
        2) Of a Surface
    iii. Orientation
        1) Angularity
        2) Perpendicularity
        3) Parallelism
    iv. Location
        1) Position
        2) Concentricity
        3) Symmetry
    v. Runout
        1) Circular
        2) Total
4. Supplementary Symbols
    i. Maximum Material Condition
    ii. Least Material Condition
    iii. Projected Tolerance Zone
    iv. Basic Dimension
    v. Datum Features
    vi. Datum Target
5. Types of Fits
    i. Loose Fit
    ii. Tight Fit
    iii. Determining Fits
6. Types of Tolerances
    i. Bilateral
    ii. Unilateral
    iii. Limits
7. Feature Control Frame

Final Exam/Lab/Project____

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