MEC103:ENGINEERING GRAPHICS

L:2 T:2 P:0 Credits:4

Course Outcomes: Through this course students should be able to

CO1 :: Visualize the knowledge of basic geometries, geometric tools, shapes and procedures used in engineering drawing.

CO2 :: Represent detailed conceptual knowledge about the dimensioning, specifications and conventions.

CO3 :: Understand the concept of projection and acquire visualization skills, projection of points.

CO4 :: Understand the concept to draw the basic views related to projections of Lines.

CO5 :: Understand different concepts of sectioning and 3-D representations of objects.

CO6 :: Sketch the different concepts of isometric projections.

CO7 :: Understand the different concepts of development of surfaces .

CO8 :: Develop the visualization skills to apply these skill in the development of new products.

Unit I

Introduction to Engineering Drawing : Principles of Engineering Graphics and their significance, Drawing instruments, Lettering in vertical Gothic letters using single stoke, Dimensioning, Different types of lines used in engineering drawing, Plane and Diagonal Scale, Basics of BIS norms

Unit II

Projection of Points and Lines : Projection of Points, Projection of line perpendicular to HP, Projection of line perpendicular to VP, Projection of line parallel to HP and VP, Projection of line inclined to HP and parallel to VP, Projection of line inclined to VP and parallel to HP, Horizontal and Vertical traces of line

Unit III

Orthographic Projections : Method of obtaining Orthographic Projections in First angle and third angle projection., Principles of orthographic projections

Unit IV

Sectional views : Sectioning webs and ribs, Importance of sectioning, Types of section including full section, offset section and half section

Unit V

Isometric Projections : Principles of Isometric Projections, Isometric Scale, Terminology, Isometric view of step, inclined, oblique, cylindrical blocks, Isometric Dimensioning

Unit VI

Development of Surfaces : Methods of development, Parallel line development of cylinder and prism, Radial line development of cone and pyramid

Text Books:

1. ENGINEERING DRAWING WITH AN INTRODUCTION TO AUTOCAD by DHANANJAY A JOLHE, MCGRAW HILL EDUCATION

References:

1. ENGINEERING GRAPHICS BY AMAR PHATAK by AMAR PHATAK, DREAMTECH PRESS

2. ENGINEERING DRAWING by M.B.SHAH,BC RANA, PEARSON

3. ENGINEERING GRAPHICS by K C JOHN, PRENTICE HALL

4. ENGINEERING DRAWING by N.D. BHAT & M. PANCHAL, CHAROTAR PUBLISHING HOUSE PVT. LTD.

5. ENGINEERING DRAWING AND DESIGN by JENSEN, HELSEL AND SHORT, MCGRAW HILL EDUCATION