

16ME101 ENGINEERING GRAPHICS

Hours Per Week :

L	T	P	C
1	-	3	3

Course Description and Objectives:

The main aim of this course is to familiarize the students with the conventional concepts of engineering drawing and computer aided applications in various fields. Engineering graphics is an "International language of Engineers". It is the most effective method of communicating technical ideas in 2D and 3D format.

Course Outcomes:

Upon completion of the course, the student will be able to

- CO1: Communicate the ideas and thoughts to other in the form of pictures.
- CO2: Develop the drawing skills while drawing engineering objects
- CO3: Implement the concept of quadrant system in drawing practice.
- CO4: Construct different engineering objects using drawing tools.
- CO5: Sketch simple objects and their pictorial views using Auto CAD.

SKILLS:

- ✓ Draw free hand sketches, layouts, circuit diagrams, plan and elevations.
- ✓ Draw geometrical objects like polygons, solids of different types.
- ✓ Visualize the objects in real time situations.
- ✓ Develop 3D views (isometric views).

UNIT - 1

L-3, P-10

INTRODUCTION TO ENGINEERING DRAWING: Introduction to engineering drawing- types of lines, lettering, dimensioning, construction of polygon and conics (ellipse, parabola and hyperbola by general method) and ellipse by oblong method.

UNIT - 2

L-3, P-8

ORTHOGRAPHIC PROJECTIONS: Principle of projection-planes of projections, projections of points, projection of straight lines; Inclined to one plane and both the planes; Projections of planes; Simple planes; Planes inclined to one reference planes.

UNIT - 3

L-3, P-8

PROJECTIONS OF SOLIDS: Projections of prisms, pyramids, cylinders, cones and solid axis inclined to one plane.

UNIT - 4

L-3, P-10

AUTOCAD: Introduction to AutoCAD

ISOMETRIC VIEWS: Isometric drawing of simple objects; Isometric view of prisms; Pyramids; Cone and cylinder; Simple orthographic views into isometric views through AutoCAD.

UNIT - 5

L-3, P-9

ORTHOGRAPHIC VIEWS: Conversion of pictorial views into orthographic views through AutoCAD.

TEXT BOOKS :

1. N.D.Bhatt, "Engineering Drawing", 53rd edition, Charotar Publication, 2014.
2. B.Agrawal and C.M.Agrawal, "Engineering Drawing", 2nd edition, Tata McGraw Hill, 2014.

REFERENCE BOOKS :

1. J. Hole, "Engineering Drawing", 2nd edition, Tata McGraw Hill, 2008.
2. K.L. Narayana, "Engineering drawing", 2nd edition, Scitech Publications, 2008.

ACTIVITIES:

- Draw line diagram of different machineries.
- Draw plan and elevations of buildings and engineering products.
- Understand, visualize 3-D components/ products and develop drawings.
- Draw different curves used in several engineering applications such as bridges, dams etc.