

16ME101 ENGINEERING GRAPHICS

Hours Per Week :

L	T	P	C
1	-	3	3

Total Hours :

L	T	P	WA/RA	SSH/HSH	CS	SA	S	BS
15		45	6	15	-	5	-	-

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 a 2D and 3D format.

Course Outcomes:

The student will be able to:

- sketch engineering objects in the freehand mode.
- create geometric construction with hand tools.
- create dimensions of objects.
- prepare plan and elevation of any pictorial view.
- draw freehand lettering.
- make isometric sketches using graphics.
- draw orthographic multi-view sketches using graphics.

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: Types of lines, Lettering, Dimensioning, Construction of polygon and conics (Ellipse, Parabola and Hyperbola by general method), 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, 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. Basant Agrawal, 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.