

Subject Code: 1ET1000112	Subject Title: ENGINEERING GRAPHICS
Pre-requisite Subject	-

Course Objective:

1. Understand and appreciate the importance of Engineering Graphics in Engineering
2. Understand the basic principles of Technical/Engineering Drawing
3. Understand the different steps in producing drawings

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				
Lecture	Tutorial	Practical	Credit	Theory		Practical		Total (T+P)
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
4	-	2	5	70	30	-	20	120

Subject Contents			
Sr. No	Topic	Total Hours	Weight (%)
1	Introduction to Engineering Graphics: Drawing instruments and accessories, BIS – SP 46. Use of plane scales, Diagonal Scales and Representative Fraction	03	20
2	Engineering Curves: Classification and application of Engineering Curves, Construction of Conics, Cycloidal Curves, Involute and Spirals along with normal and tangent to each curve	05	
3	Loci of Points: Path of the points moving on simple arrangements and simple mechanisms, slider crank mechanism, four bar chain mechanism etc.	05	10
4	Projections of Points and Lines: Introduction to principal planes of projections, Projections of the points located in same quadrant and different quadrants, Projections of line with its inclination to one reference plane and with two reference planes. True length and inclination with the reference planes	08	20
5	Projections of Planes: Projections of planes (polygons, circle and ellipse) with its inclination to one reference plane and with two reference planes, Concept of auxiliary plane method for projections of the plane	05	20
6	Projections of Solids and Section of Solids: Classification of solids. Projections of solids (Cylinder, Cone, Pyramid and Prism) along with frustum with its inclination to one reference plane and with two reference planes. Section of such solids and the true shape of the section	06	
7	Orthographic Projections: Fundamental of projection along with classification, Projections from the pictorial view of the object on the principal planes for view from front, top and sides using first angle projection method and third angle projection method, full sectional view	08	30

8	Isometric Projections and Isometric View or Drawing: Isometric Scale, Conversion of orthographic views into isometric projection, isometric view or drawing	08	
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Course Outcome:

1. To know and understand the conventions and the methods of engineering drawing.
2. Interpret engineering drawings using fundamental technical mathematics.
3. Construct basic and intermediate geometry.
4. To improve their visualization skills so that they can apply these skills in developing new products.
5. To improve their technical communication skill in the form of communicative drawings.
6. Comprehend the theory of projection.

List of References:

1. A Text Book of Engineering Graphics by P.J.Shah S.Chand & Company Ltd., New Delhi
2. Elementary Engineering Drawing by N.D.Bhatt Charotar Publishing House, Anand
3. A text book of Engineering Drawing by R.K.Dhawan, S.Chand & Company Ltd., New Delhi
4. A text book of Engineering Drawing by P.S.Gill, S.K.Kataria & sons, Delhi
5. Engineering Drawing by Arunoday Kumar, Tech-Max Publication

List of Practical:

Students are required to prepare drawing sheets on the following topics. Minimum three problems must be given for sheet number 2 to 8.

1. Practice sheet (which includes dimensioning methods, different types of line, construction of different polygon, divide the line and angle in parts, use of stencil, Scale and its type)
2. Loci of points
3. Engineering curves
4. Projection of line
5. Projection of plane
6. Projection and section of solid
7. Orthographic projection
8. Isometric projection