

Year & Sem: E1S1	Course Code: CE1102	Course Name: Engineering Drawing	No. of Credits: 4	L 2	T&PS 2	P 0
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UNIT-I: Introduction to Engineering Drawing:

Importance of graphics in engineering applications – Use of drafting instruments – BIS conventions and specifications – Size, layout and folding of drawing sheets – Lettering and dimensioning- scales used in engineering practice and representative fraction- the principals – construction of plain diagonal and Vernier scales

UNIT-II: Plane curves and free hand sketching:

Basic Geometrical constructions, Curves used in engineering practices: Conics – Construction of ellipse, parabola and hyperbola by eccentricity method – Construction of cycloid – construction of involutes of square and circle – Drawing of tangents and normal to the above curves, Scales: Construction of Diagonal and Vernier scales. Visualization concepts and Free Hand sketching: Visualization principles – Representation of three Dimensional objects – Layout of views- Free hand sketching of multiple views from pictorial views of objects

UNIT-III: Projection of points, lines and plane surfaces:

Orthographic projection- principles- Principal planes- First angle projection-projection of points. Projection of straight lines (only First angle projections) inclined to both the principal planes - Determination of true lengths and true inclinations by rotating line method and traces - Projection of planes (polygonal and circular surfaces) inclined to both the principal planes by rotating object method

UNIT-IV: Projection of solids:

Projection of simple solids like prisms, pyramids, cylinder, cone and truncated solids when the axis is inclined to one of the principal planes by rotating object method and auxiliary plane method.

UNIT-V: Projection of sectioned solids and development of surfaces:

Sectioning of above solids in simple vertical position when the cutting plane is inclined to the one of the principal planes and perpendicular to the other – obtaining true shape of section. Development of lateral surfaces of simple and sectioned solids – Prisms, pyramids cylinders and cones. Development of lateral surfaces of solids with cut-outs and holes

UNIT VI: Isometric and perspective projections:

Principles of isometric projection – isometric scale –Isometric projections of simple solids and truncated solids - Prisms, pyramids, cylinders, cones- combination of two solid objects in simple vertical positions and miscellaneous problems. Perspective projection of simple solids-Prisms, pyramids and cylinders by visual ray method.

Computer aided drafting (demonstration only)

Introduction to drafting packages and demonstration of their use.

References/Text Books:

1. Bhatt N.D. and Panchal V.M., “Engineering Drawing”, Charotar Publishing House, 50 Edition, 2010.
2. Venugopal K. and Prabhu Raja V., “Engineering Graphics”, New Age publications
3. Gopalakrishna K.R., “Engineering Drawing” (Vol. I&II combined), Subhas Stores, Bangalore, 2007.
4. Computer Aided Engineering Drawing- Trymbaka Murthy- I.K. International.

Lecture Plan: Unit-I & -II syllabus for MID-I, Unit-III & -IV syllabus for MID-II and Unit-V & -VI syllabus for MID-III examinations.

Video Lectures (Web Links):

1. <http://nptel.ac.in/courses/112104172/>
- 2.
- 3.