

Engineering Graphics & Design

UNIT – I (18 Hrs.)

INTRODUCTION TO ENGINEERING DRAWING: Principles of engineering drawing / engineering graphics / technical drawing and their significance – Drawing Instruments: their Standard and uses – symbols and conventions in drawing

practice – lettering & numbering – BIS conventions. Types of lines and their uses, Drawing Sheets: sizes and layout, methods of folding drawing sheet, Grades of

pencils used, Dimensioning: definition, types and methods of dimensioning, geometrical construction, concept of scales in drawing, types of scales, construction of plane and diagonal scales.

UNIT – II (12 Hrs.)

ORTHOGRAPHIC PROJECTIONS: Relevance of projection, Types of projections, Principles of orthographic projections in reference to quadrants – conventions – first and third angle projections, illustration through simple problems of projection; Projections of points in quadrants. Projections and trace of a line with different possible orientations in a quadrant. Methods to find true length and inclination of a line with principal planes.

UNIT – III (18 Hrs.)

PROJECTIONS OF PLANES AND SOLIDS: Concept of plane and lamina, Projections of a lamina when; parallel to any reference plane, perpendicular to any reference plane, inclined to reference plane. Traces of planes. Definition of solid, types of solids – conventions-different possible orientations of solid in a quadrant. Projections of solid when; axis parallel to reference plane, perpendicular to reference plane, inclined to one and parallel to other reference plane, parallel to both horizontal and vertical planes.

UNIT – IV (12 Hrs.)

ISOMETRIC PROJECTIONS: Principles of Isometric Projections- Isometric Scale- Isometric Views or drawing- Conventions. Isometric drawing / projections of solids such as cube, prisms, pyramids, cylinder, and cone.

UNIT – V (12 Hrs.)

Practice using Computer Aided Drafting (CAD) tools:

Hands on training on any CAD software to strengthen the understanding of the engineering drawing wherein the students will be introduced to a number of assignments as mentioned in the syllabus.