EC-152	ENGINEERING GRAPHICS LAB	L	T	P	C
	(To be taught & examined in First angle projection)	2	-	4	2

COURSE OBJECTIVES:

1. Comprehend general projection theory with emphasis on orthographic projection to represent three dimensional objects in two dimensional views.
2. To be able to plan and prepare neat orthographic drawings of points, Straight lines, Regular planes and solids
3. Draw and identify various types of section and Auxiliary views .
4. To enable the students the aspects of development of surfaces in sheet metal working
5. Introduce Auto CAD software for the creation of basic entities and usage of different tool bars.

COURSE OUTCOMES:

After successful completion of the course, the students will be able to

1. acquire basic skills in Technical graphic communication
2. visualize and communicate with 2D as well as three dimensional shapes.
3. understands the application of Industry standards and best practices applied in Engineering Graphics and draw simple 2D Engineering Drawings using Auto CAD.
4. apply the knowledge of development of surfaces in real life situations

List of Experiments:

Practice with mini Drafter on Drawing sheets:

General: Use of Drawing instruments, Lettering -Single stroke letters, Dimensioning- Representation of various type lines, Geometrical Constructions, Representative fraction.

Conic sections: general construction and special methods for ellipse, parabola and hyperbola.

Cycloidal curves: cycloid, epicycloid and hypocycloid; involute of circle , and Archemedian spiral.

Method of Projections: Principles of projection - First angle and third angle projection of points. Projection of straight lines. Traces of lines.

Projections of Planes: Projections of planes, projections on auxiliary planes.

Projections of Solids: Projections of Cubes, Prisms, Pyramids, Cylinders and Cones with varying positions.

Sections Of Solids: Sections of Cubes, Prisms, Pyramids, cylinders , and Cones. true shapes of sections. (Limited to the Section Planes perpendicular to one of the Principal Planes).

Development of Surfaces: Lateral development of cut sections of Cubes, Prisms, Pyramids, Cylinders and Cones.

Isometric Projections: Isometric Projection and conversion of Orthographic Projections into isometric views. (Treatment is limited to simple objects only).

Orthographic Projections: Conversion of pictorial views into Orthographic views. (Treatment is limited to simple castings).

Computer Aided Drafting (Using any standard package) (Demonstration only) :

Setting up a drawing: starting , main menu (New, Open, Save, Save As etc.), Opening screen, error correction on screen, units, co-ordinate system, limits, grid, snap, ortho

Tool bars: Draw tool bar, object snap tool bar, modify tool bar, dimension tool Bar

PRACTICE OF 2D DRAWINGS: Exercises of Orthographic views for simple solids using all commands in various tool bars.

LEARNING RESOURCES:

TEXT BOOK(s):

N.D. Bhatt & V.M. Panchal - Engineering Drawing, 50th Edition, Charotar publishing house , 2010.

REFERENCE BOOK(s):

1. Prof.K.L.Narayana & Prof. R.K.Kannaiah - Engineering Drawing, Scitech Publications, 2010.
2. James D. Bethune - Engineering Graphics with AutoCAD 2002, PHI, 2011.