CH/EC/EE165	ENGINEERING GRAPHICS	L	T	P	C	Int	Ext
		1	-	4	3.0	30	70

Semester II [First Year]

COURSE OBJECTIVES:

1. Expose the students to standards and conventions followed in preparation of engineering drawings.
2. Make them understand the concepts of orthographic and isometric projections
3. Develop the ability of conveying the engineering information through drawings.
4. Make them understand the relevance of engineering drawing to different engineering domains
5. Develop the ability of producing engineering drawings using drawing instruments.
6. Enable them to use computer aided drafting packages for the generation of drawings

COURSE OUTCOMES:

After the successful completion of the course,students are able to

1. Understand the engineering drawing standards and their usage
2. Enhance visualization skills, which will facilitate the understanding of engineering systems.
3. Understand the concepts of orthographic projections and isometric projection
4. Construct and dimension 2-D geometries using CAD software

EXPERIMENTS:

1. **INTRODUCTION:** Introduction to Drawing instruments and their uses, geometrical construction procedures.

   CURVES: Conic sections - general construction methods for ellipse, parabola and hyperbola. Other methods to construct ellipse only, cycloid, involute of a circle.

2. **Orthographic projections:** Introduction, Projections of points.Projections of straight lines- parallel to both the planes, parallel to one plane and inclined to the other plane

3. **Projections of planes:** Projections of plane figures: circle, square, rhombus, rectangle, triangle, pentagon and hexagon, perpendicular / parallel to one plane and inclined to the other reference plane.

   Projections of Solids - Prisms, Pyramids, Cones and Cylinders with the axis inclined to one of the reference planes.

4. **Isometric Projections:** Principles of Isometric projection-Isometric Scale, Isometric Views, Conventions; Isometric Views of lines, Planes, Simple and compound Solids.

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

5. **Over view of Computer Aided drafting (AutoCAD):** Introduction, starting and customizing AutoCAD screen, usage of different menus, toolbars (drawing, editing, dimension, text, object properties..etc), tabs (Object, snap, grid, polar, ortho, otrack etc.) and command prompt. Setting units, limits, layers and viewports (Isometric, Top, Front, back. etc.).

   2D drawings of various mechanical and structural components, electrical and electronic circuits.

LEARNING RESOURCES:

TEXT BOOK(s):

1. Engineering Drawing, N. D. Butt, Chariot Publications
2. Engineering Drawing +Auto CAD, K Venugopal &V Prabhuraja, New age Publishers.

REFERENCE BOOK(s):

1. Engineering Drawing, K. L. Narayana & P. Kannaiah, Scitech Publishers.
2. Engineering Graphics for Degree, K. C. John, PHI Publishers

WEB RESOURCES:

1. Engineering Drawing, Agarwal & Agarwal, Tata McGraw Hill Publishers
2. Engineering Graphics, P.I. Varghese, McGraw Hill Publishers