ENGINEERING GRAPHICS

I-Semester

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
A5ME02	ESC	1	-	4	3	30	70	100

COURSE OBJECTIVES:

The course should enable the students to:

1. Create awareness and emphasize the need for Engineering Drawing in various branches of engineering.
2. Enable the student with various concepts of dimensioning, conventions and standards related to engineering drawings.
3. Follow the basic drawing standards and conventions.
4. Develop skills in three-dimensional visualization of engineering component.

UNIT-I	INTRODUCTION

Introduction to Engineering Drawing: Principles of Engineering Graphics and their significance, INTRODUCTION TO COMPUTER AIDED DRAFTING: Initial Setup Commands, Utility commands, Drawing Aids, Saving and Plotting, Entity Draw Commands, Display Commands, Edit Commands, Layers concept, 2D Drawings-Simple Exercises

UNIT-II	ENGINEERING CURVES

Engineering Curves: Conics Ellipse, Parabola, and Hyperbola General Method only, Cycloids, Involutes

UNIT-III	ORTHOGRAPHIC PROJECTION

Principles of Orthographic Projections – conventions – first and third angle projections. Projections of points-Projection of lines inclined to both the planes. (First angle projection only)
PROJECTIONS OF PLANES: Projections of regular planes, inclined to both planes.

UNIT-IV	PROJECTION OF SOLIDS AND DEVELOPMENT OF SURFACES

PROJECTION OF SOLIDS-Solids inclined toboth planes
DEVELOPMENT OF SURFACE/SOLIDS: Theory of development, development of lateral surface along with base.

UNIT-V	ISOMETRIC DRAWINGS

Divisions of pictorial projection, theory of Isometric Drawing- Isometric view and Isometric projections; Drawing Isometric circles, Dimensioning Isometric Objects;
Conversion of Isometric view to Orthographic views and Orthographic to isometric views.

Text Books:

1. Bhatt N.D., Panchal V.M. & Ingle P.R., (2014), Engineering Drawing, Charotar Publishing House
2. Agrawal B. &Agrawal C. M. (2012), Engineering Graphics, TMH Publication

Reference Books:

1. Johle (2009), Engineering Drawing, Tata McGraw Hill, New Delhi, India.
2. Sham Tickoo, D. saravanan, “AutoCAD 2010 for engineers and designers” Dreamtech Press, 2010

COURSE OUTCOMES:

At the end of the course the student should be able to:

1. Sketch the various curves used in engineering and their applications
2. Apply the knowledge of quadrant system and say to which quadrant and angle of project the object belongs.
3. Evaluate the given object position and draw the projections of objects
4. Convert the pictorial views into orthographic view and vice versa.
5. Develop the new drawings for the industry requirements