

ENGINEERING GRAPHICS & DESIGN

I B. TECH- I SEMESTER								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIE	SEE	Total
A4ES02	ESC	1	0	4	3	30	70	100
COURSE OBJECTIVES:								
<ol style="list-style-type: none"> 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						Classes: 7	
Introduction to Engineering Drawing covering: Principles of Engineering Graphics and their significance, usage of drawing instruments, lettering, Conic sections including the Rectangular Hyperbola (General method only); Cycloid, Epicycloids, Hypocycloid and Involute.								
UNIT-II	DRAWING OF PROJECTIONS OR VIEWS: ORTHOGRAPHIC PROJECTION IN FIRST ANGLE PROJECTION ONLY						Classes: 10	
Principles of orthographic projections – conventions – first and third angle projections. Projections of points-Projection of lines inclined to both the planes. PROJECTIONS OF PLANES: Projections of regular planes, inclined to both planes.								
UNIT-III	INTRODUCTION TO COMPUTER AIDED DRAFTING						Classes: 8	
INTRODUCTION TO COMPUTER AIDED DRAFTING: Generation of points, lines, curves, polygons, simple solids, dimensioning. LAYERS: Concept of layers, working with layers, creating, display, locking, unlocking, and delete commands, Coordinate system in AutoCAD, UCS, WCS, MCS PROJECTION OF SOLIDS- Solids inclined to both planes(Auxiliary plane method) DEVELOPMENT OF SURFACES OF SOLIDS: Theory of development ,development of lateral surface along with base.								
UNIT-IV	ISOMETRIC DRAWINGS						Classes: 05	
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.								
UNIT-V	3D MODELING						Classes: 04	
Types of 3D models, 3D Coordinate Systems, basic commands in 3D, PEDIT command. CREATING SOLID MODELS: creating pre-defined Solid Primitives, Dynamic UCS, methods of creating solids by - Extrude, Revolve, Swept, Loft, & Presspull, in 3Dcreating solid models, Dynamic UCS. MODIFYING 3D OBJECTS: Fillet, Chamfer, Rotate, Mirror, Array, Slicing solid Models. EDITING 3D OBJECTS: SOLVIEW, SOLDRAW, SOLPROF.								
TEXT BOOKS:								
<ol style="list-style-type: none"> 1. D. P. Kothari and I. J. Nagrath, "Basic Electrical Engineering", Tata McGraw Hill, 2010. 2. D. C. Kulshreshtha, "Basic Electrical Engineering", McGraw Hill, 2009. 3. Basic Electrical Engineering by M.S. Naidu and S. Kamakshaiah TMH 4. Mehta V K, —Principles of Electrical Engineeringll, S. Chand & Company 								

REFERENCE BOOKS:

1. L. S. Bobrow, "Fundamentals of Electrical Engineering", Oxford University Press, 2011.
2. E. Hughes, "Electrical and Electronics Technology", Pearson, 2010.
3. V. D. Toro, "Electrical Engineering Fundamentals", Prentice Hall India, 1989.
4. Nagsarkar T K and Sukhija M S, —Basics of Electrical Engineeringll, Oxford press. Basic concepts of Electrical Engineering, P.S. Subramanyam, BS Publications.