Course Number and Name
BME 102 - Engineering Graphics

Credits and Contact Hours
3 & 45

Course Coordinator's Name
Mr.Saravana Kumar

Text Books and References

Text Books:

1. N.D.Bhatt and V.M.Panchal, "Engineering drawing", charotar publishing house, 50th edition, 2010.
2. K.V.Natarajan "A Text book of Engineering Graphics", Dhanalakshmi Publishers, Chennai, 2009.

References:

1. K.R.Gopalakrishna, "Engineering drawing", (Vol-I & II combined) Subhas stores, Bangalore, 2007.
2. K.Venugopal and V. PrabhuRaja, "Engineering Graphics", New age International Private limited, 2008.
3. Luzzader, Warren.J., and Duff, John.M.,, "Fundamentals of Engineering Drawing with an introduction to Interactive computer graphics for design and production", Eastern economy edition, Prentice Hall of India Pvt Ltd,New Delhi,2005

Course Description

a) To develop graphical skills in students for communication of concepts, design ideas of engineering products, and expose them to existing standards related to technical Drawings.

b) To impart a sound knowledge on the principles of computers involving the different application oriented topics required for all engineering branches.

c) Graduates will demonstrate the ability to apply knowledge of mathematics to develop and analyze computing systems.

d) Graduates will have a solid understanding of the theory and concepts underlying computer science

Prerequisites	Co-requisites
+2 Level Maths & Physics	Nil

required, elective, or selected elective (as per Table 5-1)
Required

Course Outcomes (COs)
CO1: To visualize two dimensional graphic representation of three dimensional objects and buildings
CO2: To produce two dimensional graphic representation of three dimensional objects
CO3: To comprehend and visualize 3D views of objects.
CO4: To understand and generate the different curves used in engineering applications.
CO5: To learn and write program in "C".
CO6: To introduce the fundamental of CAD Graphics used in design.

Student Outcomes (SOs) from Criterion 3 covered by this Course

COs/SOs	a	b	c	d	e	f	g	h	i	j	k	l
CO1	H											H
CO2	M	H										M

CO3			L								M
CO4						L		H	H			L
CO5			L						H			L
CO6			L							H		L

List of Topics Covered

UNIT-I BASIC CURVES, PROJECTION OF POINTS AND STRAIGHT LINES   9
Conics-construction of ellipse, parabola and hyperbola by eccentricity method - construction of involutes of square and circle-Drawing of tangent and normal to the above curves-Scales-Basic drawing conventions and standards-Orthographic projection principles- Principal planes-First angle projection- Projection of points. Projection of straight lines (only first angle projections) inclined to both the principal planes- Determination of true lengths and true inclinations by rotating line method.

UNIT-II PROJECTIONS OF PLANES AND SOLIDS   9
Projection of planes (Polygonal and circular surfaces) inclined to both the principal planes. Projection of simple solids like prisms, pyramids, cylinder, cone and truncated solids when the axis is inclined to one of the principal planes by rotating object method

UNIT-III ORTHOGRAPHIC PROJECTIONS, ISOMETRIC PROJECTIONS & FREE HAND SKETCHING   9
Orthographic projection of Simple parts from 3D diagram-Principles of isometric projection and isometric view-isometric scale- Isometric projections of simple solids and truncated solids- Prisms, pyramids, cylinders, cones.

UNIT-IV PROJECTION OF SECTIONED SOLIDS AND DEVELOPMENT OF SURFACES   9
Sectioning of solids in simple vertical position when the cutting plane is inclined to the one of the principal planes and perpendicular to the other-obtaining true shape of section. Development of lateral surfaces of simple and sectioned solids- Prisms, pyramids cylinders and cones.

UNIT-V PERSPECTIVE PROJECTION, BUILDING DRAWING AND COMPUTER AIDED DRAFTING   9
Perspective projection of cubes and cylinders by visual ray method. Introduction- components of simple residential or office building-specifications-plan and elevation of different types of Residential buildings and office buildings. Introduction to drafting packages and basic commands used in AUTO CAD. Demonstration of drafting packages.