Engineering Graphics

Course Code	19ES1203	Year	I	Semester	II
Course Category	Engineering Sciences	Branch	ME	Course Type	Theory
Credits	2.5	L-T-P	1-0-3	Prerequisites	Nil
Continuous Internal Evaluation:	30	Semester End Evaluation:	70	Total Marks:	100

Course Outcomes	
Upon successful completion of the course, the student will be able to	
CO1	Conic sections and curves used in engineering practice.
CO2	Orthographic projections of points, lines, planes and solids.
CO3	Isometric and orthographic views.
CO4	Development of lateral surfaces of solids.
CO5	Features of CAD packages.

Contribution of Course Outcomes towards achievement of Program Outcomes &Strength of correlations (3:High, 2: Medium, 1:Low)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3									3	1		3	1
CO2	3									3	1		3	1
CO3	3									3	1		3	1
CO4	3									3	1		3	1
CO5	3				3					3	1		3	1

Syllabus

Unit No.	Contents	Mapped CO
I	Introduction to Engineering Graphics: Principles of Engineering Graphics and their significance- Conventions in drawing, lettering, dimensioning, BIS conventions. a) **Conic sections**: Construction of ellipse, parabola and hyperbola (general method only) **Cycloidal curves**: Cycloid, Epicycloid and Hypocycloid **Involutes**: Involute of regular polygons and Circle.	CO1
II	**Projection of points, lines and planes:** Projection of points in different quadrants, lines inclined to one and both the reference planes, finding true length and inclination made by the line. Projections of regular plane surfaces.	CO2
III	**Projections of solids:** Projections of regular solids such as cube, prism, pyramid, cylinder and cone (Treatment limited to solids inclined to one of the reference planes). **Sections of solids:** Section planes and sectional view of right regular solids - cube, prism, cylinder, pyramid and cone. True shape of the section. (Treatment limited to the solids perpendicular to one of the principal planes)	CO3
IV	**Orthographic Views:** Systems of projections, conversion of isometric view to orthographic view. **Isometric Projections:** Principles of isometric projection- isometric scale; isometric views: lines, planes and solids.(Treatment is limited to simple objects only)	CO4

V	**Development of surfaces:** Development of lateral surfaces of right regular solids-prism, cylinder, pyramid, cone and their sectional parts. (Treatment limited to solids perpendicular to one of the principal planes)	CO5
	Introduction to CAD: Basic drawing, editing and dimensioning commands: line, circle, rectangle, erase, view, undo, redo, snap, edit, move, copy, rotate, scale, mirror, layer, template, polyline, trim, extend, stretch, fillet, array, dimension.	

Learning Resources

Text Books

1. N.D. Bhatt, Engineering Drawing, 53/e, Charotar Publishers,2016.
2. K.L.Narayana&P.Kannaiah,EngineeringDrawing,3/e,ScitechPublishers,2012.

Reference Books

1. Dhanajay A Jolhe, Engineering Drawing, Tata McGraw-Hill,2009.
2. Shah and Rana, Engineering Drawing, 2/e, Pearson Education,2009.
3. K. Venugopal, Engineering Drawing and Graphics,6/e,NewAgePublishers,2011.
4. K.C. John, Engineering Graphics, 2/e, PHI,2013.
5. Basant Agarwal and C.M.Agarwal, Engineering Drawing,TataMcGrawHill,2008.

e- Resources & other digital material

1. http://www.youtube.com/watch?v=XCWJ XrkWco, Accessed On 01-06-2017.
2. http://www.me.umn.edu/courses/me2011/handouts/drawing/blanco-tutorial.html#

isodrawing, Accessed On 01-06-2017.

3. http://www.slideshare.net, Accessed On 01-06-2017.
4. http://edpstuff.blogspot.in, Accessed On 01-06-2017.