Engineering Graphics

(For EEE, ECE and CSE branches)

CourseCode	23ES1203	**Year**	I	**Semester**	II
Course Category	Engineering Science	**Branch**	ECE	**Course Type**	Theory
Credits	3	**L-T-P**	1-0-4	**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	Construct regular polygons, conic sections, curves and scales used in Engineering practice.(L3)
CO2	Construct orthographic projections of an object when its position is defined with respect to the reference planes.(L3)
CO3	Develop the lateral surfaces of solids.(L3)
CO4	Develop the orthographic projections for the given isometric view.(L3)
CO5	Identify the appropriate commands that are used to prepare the given drawing in CAD environment.(L3)

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**	**PSO1**	**PSO2**
CO1	2	2						2	2	2		1	2
CO2	3	3						3	3	3		1	2
CO3	2	2						2	2	2		1	2
CO4	2	2						2	2	2		1	2
CO5	2				2			2	2	2		1	2

Unit No.	**Syllabus**	**Mapped CO's**
1	**Introduction:** Lines, Lettering and Dimensioning, Geometrical Constructions and Constructing regular polygons by general method. **Curves:** construction of ellipse, parabola and hyperbola by general method Cycloids, Involutes, Normal and tangent to the Curves. **Scales:** Plain scales and diagonal scales.	CO-1
2	**Orthographic Projections**: Reference plane, importance of reference lines orPlane, Projections of a point situated in any one of the four quadrants. **Projections of Straight Lines:** Projections of straight lines parallel to both reference planes, perpendicular to one reference plane and parallel to other reference plane, inclined to one reference plane and	CO-2

	parallel to the other reference plane. Projections of Straight Line Inclined to both the reference planes.	
3	**Projections of Planes:** Regular planes only, Plane perpendicular to both reference planes, Plane parallel to one reference plane and perpendicular to the other reference plane, Plane inclined to one reference plane and perpendicular to the other reference plane, plane inclined to both the reference planes. **Projections of Solids:** Types of solids: Polyhedra and Solids of revolution. Projections of solids in simple positions: Axis perpendicular to horizontal plane, Axis perpendicular to vertical plane and Axis parallel to both the reference planes, Projection of Solids with axis inclined to one reference planeand parallel to other plane	CO-2
4	**Sections of Solids:** Perpendicular and inclined section planes, Sectional views and True shape of section, Sections of solids in simple position only.	CO-2
	Development of Surfaces: Methods of Development: Parallel line development and radial line development. Development of a cube, prism, cylinder, pyramid and cone.	CO-3
5	**Conversion of Views:** Conversion of isometric views to orthographic views.	CO-4
	Computer graphics: Creating 2D&3Ddrawingsof objects including PCB andTransformations using Auto CAD (Not for end examination).	CO-5

Learning Resources

Text Books

1. N.D. Bhatt, Engineering Drawing, 53rd , Charotar Publishers,2016.

Reference Books

1. K.L.Narayanaand, P.Kannaiah, Engineering Drawing, Tata McGraw Hill, 2013.
2. M.B.Shahand, B.C.Rana Engineering Drawing, Pearson Education Inc, 2009.
3. M.B.Shahand, B.C.Rana Engineering Drawing with an Introduction to Auto CAD, Tata McGraw Hill, 2017.
4. K. Venugopal, Engineering Drawing and Graphics,6th , New Age Publishers,2011.

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.