SVKM's Narsee Monjee Institute of Management Studies
Mukesh Patel School of Technology Management & Engineering

Program: B Tech (All Programs except CSBS and CSE(DS)311(VT)) /MBA Tech (All Programs)				**Semester:** I / II	
Course: Engineering Graphics and Design				**Code**: 702ME0C001	
Teaching Scheme				**Evaluation Scheme**	
Lecture (Hours per week)	**Practical (Hours per week)**	**Tutorial (Hours per week)**	**Credit**	**Internal Continuous Assessment (ICA) (Marks-50)**	**Term End Examinations (TEE) (Marks-100)**
2	2	0	3	Marks Scaled to 50	Marks Scaled to 50

Pre-requisite: -

Course Objectives

This course is aimed at providing basic understanding of the fundamentals of Engineering Graphics; mainly visualization, graphics theory, standards & conventions of drawing, the tools of drawing and the use of drawings in engineering applications. The course has been structured to include sufficient simulations which would aid the student in visualization of three-dimensional objects and developing the drawing.

Course Outcomes

After completion of the course, students will be able to-

1. Interpret and communicate drawings effectively using different types of curves, lines, planes
2. Analyze the concepts of projections and section of right regular solids with their development
3. Apply the techniques, skills, and modern tools to create projections of machine components with the help of software

Detailed Syllabus

Unit	**Description**	**Duration**
1.	**Introduction to Engineering Drawing** Principles of engineering graphics and their significance, usage of drawing instruments, lettering, numbering; Conic sections (ellipse, parabola, hyperbola - general method only) including the rectangular hyperbola; cycloid, epi-cycloid, hypo-cycloid and involutes.	04
2.	**Projections of Lines and Planes** Introduction to projections of points, conventions; points locating in all quadrants. **Projections of Lines** Introduction, lines inclined to one plane and parallel to other plane, lines inclined to both planes. **Projections of Planes** Introduction, types of planes, plane surface inclined to both reference planes, projection of auxiliary planes	05
3.	**Projections of Regular Solids** Introduction to projection of regular solids, types of solids; Projections of regular solids (prisms, pyramids, cylinders, cones) covering those inclined to both the reference planes	05

4.	**Section and Development of Regular Solids** Introduction to section and development of regular solids; Section of regular prisms, pyramids, cylinders, cones; Development of surfaces of right regular solids namely prisms, pyramids, cylinders and cones.	04
5.	**Orthographic Projections** Principles of orthographic projections, conventions used in quadrant formation, conversion of isometric models to orthographic views and vice-versa, orthographic views of geometrical solids and objects from industry.	04
6.	**Sectional Orthographic Projections** Principles of sectional orthographic projection, need of sectional views, types of sections, hatching of sectioned part and principles, sectional orthographic views of geometrical solids and objects from industry.	04
7.	**Isometric Projections** Principles of isometric projection-isometric scale, isometric views, conventions; isometric views of lines, planes, simple and compound solids; conversion of orthographic views to isometric models to and vice-versa; isometrics projections of given views.	04
	Total	**30**

Text Books

1. N. D. Bhatt, V. M. Panchal and P. R. Ingle, *Engineering Drawing*, 53rd Edition, Charotar Publishing House, 2014.

Reference Books

1. M. B. Shah and B. C. Rana, *Engineering Drawing*, 2nd Edition, Pearson Education, 2014.
2. K. Venugopal and V. Prabhu Raja, *Engineering Drawing + AutoCAD*, 6th edition, New Age International (P) Ltd. Publishers, 2011.

Laboratory Work

8 to 10 experiments based on the syllabus.

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Signature

(Head of the Department)