

# **UNIVERSITY OF ENGINEERING & MANAGEMENT, JAIPUR**

## Lecture-wise Plan

**Subject Name: Engineering graphics & design**  
**Year: 1<sup>st</sup> Year**

**Subject Code-MEC001**  
**Semester: First**

<b>Module Number</b>	<b>Topics</b>	<b>Number of Lectures</b>
1	<b><i>Introduction to Engineering Drawing :</i></b>	<b>6L</b>
	1. <a href="#">Principles of Engineering Graphics and their significance, Usage of Drawing instruments</a>	1L
	2. <a href="#">Lines, lettering</a>	1L
	3. <a href="#">Conic sections-Ellipse, Parabola, Hyperbola</a>	1L
	4. <a href="#">Cycloid, Epicycloid, Hypocycloid and Involute</a>	1L
	5. <a href="#">Scales-Plain scale</a>	1L
	6. <a href="#">Diagonal</a> and <a href="#">Vernier Scales</a>	1L
2	<b><i>Orthographic Projections :</i></b>	<b>4L</b>
	1. <a href="#">Principles of Orthographic Projections</a>	1L
	2. <a href="#">Projections of Points and lines</a>	2L
	3. <a href="#">Projections of planes</a>	1L
3	<b><i>Projections of Regular Solids :</i></b>	<b>2L</b>
	1. <a href="#">Projections of Regular Solids: introduction</a>	1L
	2. <a href="#">Floor plans that include: windows, doors, and fixtures such as WC, bath, sink, shower</a>	1L
4	<b><i>Sections and Sectional Views of Right Angular Solids:</i></b>	<b>2L</b>
	1. <a href="#">Sections and Sectional Views of Right Angular Solids introduction</a>	1L
	2. <a href="#">Development of surfaces of Right Regular Solids, Draw the sectional orthographic views of geometrical solids</a>	1L
5	<b><i>Isometric Projections :</i></b>	<b>2L</b>
	1. <a href="#">Principles of Isometric projection- Isometric Scale, Isometric Views of Planes, Simple and compound Solids</a>	1L
	2. <a href="#">Conversion of Isometric Views to Orthographic Views and Vice-versa</a>	1L
6	<b><i>Overview of Computer Graphics:</i></b>	<b>1L</b>
	1. listing the computer technologies that impact on graphical communication, Demonstrating knowledge of the theory of CAD software	1L
7	<b><i>Customisation &amp; CAD Drawing</i></b>	<b>2L</b>
	1. consisting of set up of the drawing page and the printer, including scale settings, Setting up of units and drawing limits; ISO and ANSI standards for coordinate dimensioning and tolerancing	1L
	2. Orthographic constraints, Snap to objects manually and automatically; Producing drawings by using	1L

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	various coordinate input entry methods to draw straight lines, Applying various ways of drawing circles;	
8	<b><i>Annotations, layering &amp; other functions:</i></b>	<b>4L</b>
	1. applying dimensions to objects, applying annotations to drawings; Setting up and use of Layers, layers to create drawings, Create, edit and use customized layers; Changing line lengths through modifying existing lines (extend/lengthen); Printing documents to paper using the print command; orthographic projection techniques; Drawing sectional views of composite right regular geometric solids and project the true shape of the sectioned surface	2L
	2. Drawing annotation, Computer-aided design (CAD) software modeling of parts and assemblies. Parametric and non-parametric solid, surface, and wireframe models. Part editing and two-dimensional documentation of models. Planar projection theory, including sketching of perspective, isometric, multiview, auxiliary, and section views. Spatial visualization exercises. Dimensioning guidelines, tolerancing techniques; dimensioning and scale multi views of dwelling	2L
9	<b><i>Demonstration of a simple team design project:</i></b>	<b>4L</b>
	1. Demonstration of a simple team design project that illustrates Geometry and topology of engineered components: creation of engineering models and their presentation in standard 2D blueprint form and as 3D wire-frame and shaded solids; meshed topologies for engineering analysis and tool-path generation for component manufacture	2L
	2. geometric dimensioning and tolerancing; Use of solid-modeling software for creating associative models at the component and assembly levels; floor plans that include: windows, doors, and fixtures such as WC, bath, sink, shower, etc. Applying colour coding according to building drawing practice; Drawing sectional elevation showing foundation to ceiling; Introduction to Building Information Modelling (BIM).	2L
<b>Total Number Of lectures = 27</b>		