

Lesson Plan Engineering Graphics

Discipline	:	CSE
Year	:	1st
Subject	:	Engineering Graphics
Lesson Plan Duration	:	40 weeks
Work Load	:	Practical— 03 Hrs/week

Week	Practical	
	Practical Day	Topic
1st	1st	Unit 1 Introduction to Engineering Drawing Definition of Engineering Drawing, Introduction to drawing instruments, materials, layout and sizes of drawing sheets and drawing boards, engineering graph book, different grades of pencils to be used.
2	2nd	Different types of lines in engineering drawing as per BIS specifications Practice of vertical, horizontal and inclined lines.
3	3rd	Principles of dimensioning: Types, elements, placing, different methods of dimensioning.
4	4th	Practice of geometrical figures such as –triangles, rectangles, circles, ellipses and parabola, hexagonal, pentagon with the help of drawing instruments.
5	5th	Definition and classification of lettering, single-stroke vertical (alphabet and numerals).
6	6th	Definition and classification of lettering, single stroke inclined lettering at 75° (alphabet and numerals)
7	7th	Freehand letter writing and sketches of various kinds of objects in graph Sketchbook/graph paper.
8	8th	Unit 2 Scales their needs and importance (theoretical instructions), types of scales, the definition of Representative Fraction (R.F.), and length of the scale.
9	9th	Construction of Plain and diagonal scale.
10	10th	1st Assessment Test
11	11th	Unit 3 Orthographic Projection: Theory of orthographic projections (Elaborate theoretical instructions). Projections of points in different quadrants.
12	12th	Projection of line (1st angle and 3rd angle) Line parallel to both planes Line perpendicular to any one of the principal plane
13	13th	Line inclined to any one of the principal plane and parallel to other
14	14th	Projection of Solid-Cube, Cuboid, Cone, Prism, pyramid,
15	15th	Three views of orthographic projections of different objects.
16	16th	Unit 4 Sectioning and Identification of surfaces: - Identifications of surfaces, Importance and salient features of sectioning of objects.
17	17th	Description of full section, half section partial or broken out sections, Offset Sections, revolved sections and removed sections
19	19th	Isometric views of different objects
20	20th	2nd Internal Assessment Exam
21	21st	Unit 6 Graphics using CAD Meaning, the requirement of computer graphics, CAD, screen structure and toolbars in AutoCAD, coordinate system, Drawing Limits, Units.
22	22nd	Practice of LINE command, coordinates-Absolute, incremental, polar. POLYLINE, CIRCLE (3P,2P, TTR), ARC, ELLIPSE.

23	23 rd	Using above geometrical commands for making figure e.g. triangle, rectangle, hexagon, pentagon, parabola. Editing commands-Scale, erase, copy, stretch, lengthen and explode.
24	24 th	Use of SNAP, GRID and ORTHO mode for selection of points quickly. Use of these modes while picking points in LINE, CIRCLE, PLINE, ARC, ELLIPSE etc commands.
25	25 th	Drawing projections of lines and solids. Drawing orthographic projections of different objects AutoCAD for the isometric views sheets. Making single computer sheet showing all the three views and an isometric (in single split screen view) of any object showing understanding of use of AutoCAD in making isometric views.
26	26 th	Unit 7 Common Symbols and conventions used in Engineering Civil Engineering sanitary fitting symbols Electrical fitting symbols for domestic interior installations Safety symbols used in engineering works
27	27 th	Unit 8 Development of surfaces (cylinder, cuboid, cone) Parallel line, radial line method
28	28 th	Unit 9 Detailed and assembly drawing Principle and utility of detailed and assembly drawings, Wooden joints i.e. corner mortise and tenon joint, Tee Halving joint, Mitre faced corner joint, Tee bridle joint, crossed wooden joint, cogged joint, dovetail joint.
29	29 th	Through Mortise and tenon joint, furniture drawing – freehand and with the help of drawing instruments, Making Wooden Joint sheets in AutoCAD, rendering & showing assembly animation.
30	30 th	Unit 10 Screw threads and threaded fasteners Type of threads-external and internal threads, right and left hand threads (actual conventional representation), Single and multiple start thread.
31	31 st	Different forms of screw threads –V threads (B.S.W. threads, B.A thread, American National and Metric thread), Square threads (Square, Acme, buttress and Knuckle thread)
32	32 nd	Different views of hexagonal and square nuts. Square and hexagonal headed bolt.
33	33 rd	Foundations bolts-Rag bolt, Lewis bolt, Curved bolt and eye bolt. Freehand sketches of various types of screws and studs.
34	34 th	Unit 11 Keys and Cotters Various types of keys and cotters - their practical application, drawings of various keys and cotters showing keys and cotters in position.
35	35 th	Various types of Joints -Spigot and Socket Joints
36	36 th	-Gib and cotter joint -Knuckle joint
37	37 th	Unit 12 Couplings Introduction to coupling, their use and types Muff coupling
38	38 th	Flange coupling (protected)
39	39 th	Flexible Coupling
40	40 th	Viva Voce