

LESSON PLAN

Name of Faculty: Sh. Krishan Singh, Sh. Chandan Singh

Discipline: Computer Engg., Mech. Engg.

Subject: Engineering Graphics

Lesson Plan Duration: 30 WEEKS

Work Load (Lecture/Practical) Per Week: 3 Practicals)

WEEK	PRACTICALS		Drawing Sheets
	Lect. No.	Topic Name	
1st	1	Unit-1- INTRODUCTION TO ENGINEERING DRAWING	06
	2	Definition of Engineering Drawing, Introduction to drawing instruments	
	3	Materials, layout and sizes of drawing sheets and drawing boards,	
2nd	4	Engineering graph book, different grades of pencils to be used.	
	5	Different types of lines in engineering drawing as per BIS specifications	
	6	Practice of vertical, horizontal and inclined lines	
3rd	7	Practice of vertical, horizontal and inclined lines	
	8	Principles of dimensioning: Types, elements, placing, different methods of dimensioning	
	9	Practice of geometrical figures such as –triangles, rectangles,	
4th	10	circles, ellipses and parabola,	
	11	Hexagonal, pentagon with the help of drawing instruments.	
	12	Definition and classification of lettering	
5th	13	single stroke vertical	
	14	and inclined lettering at 75 ⁰ (alphabet)	
	15	and inclined lettering at 75 ⁰ (numerals)	
6th	16	Freehand letter writing	
	17	sketches of various kind of objects in graph Sketch book/graph paper	
	18	sketches of various kind of objects in graph -graph paper	
7th	19	Revised Unit-1	
	20	Revised Unit-1	
	21	SESSIONAL TEST -1	
8th	22	Unit-2- GRAPHICS USING CAD , Meaning, requirement of computer graphics	06
	23	CAD, screen structure and toolbars in AutoCAD,	
	24	coordinate system, Drawing Limits, Units	
	25	Practice of LINE command,	

9th	26	Coordinates-Absolute, incremental, polar.			
	27	POLYLINE,			
10th	28	CIRCLE(3P,2P, TTR),			
	29	ARC, ELLIPSE			
	30	Using above geometrical commands for making figure e.g. triangle,			
11th	31	Using above geometrical commands for making figure e.g. rectangle, hexagon			
	32	Using above geometrical commands for making figure e.g. pentagon, parabola.			
	33	Editing commands-Scale, erase,			
12th	34	Editing commands copy, stretch,			
	35	Editing commands lengthen and explode			
	36	Use of SNAP, GRID			
13th	37	ORTHO mode for selection of points quickly.			
	38	Use of these modes while picking points in LINE, CIRCLE, commands.			
	39	Use of these modes while picking points in PLINE, ARC, ELLIPSE etc commands.			
14th	40	Revised Unit-2			
	41	Revised Unit-2			
	42	SESSIONAL TEST -2			
15th	43	Unit-3- Scales		01	
	44	Scales-their needs and importance (theoretical instructions),			
	45	Types of scales,			
16th	46	Definition of Representative Fraction (R.F.) and length of scale.			
	47	Construction of Plain and diagonal scale			
	48	Unit-4- Orthographic Projection			
17th	49	Theory of orthographic projections (Elaborate theoretical instructions)			08
	50	Projections of points in different quadrants			
	51	Projection of line (1 st angle and 3 rd angle) a) Line parallel to both planes b) Line perpendicular to any one of the principal plane			
18th	52	c) Line inclined to any one of the principal plane and parallel to other			
	53	Projection of Solid-Cube, Cuboids ,			
	54	Cone, Prism, pyramid			

19th	55	Three views of orthographic projections of different objects (At least one sheet in 3 rd angle)	
	56	Three views of orthographic projections of different objects (At least one sheet in 3 rd angle)	
	57	Unit-5- Sectioning and Identification of surfaces	
20th	58	Identifications of surfaces, Importance and	02
	59	salient features of sectioning of objects	
	60	Description of full section, half section partial or broken out sections, Offset	
21th	61	Sections, revolved sections and removed sections	03
	62	Unit-6- Isometric Views	
	63	Fundamental of isometric projections	
22th	64	and isometric scale	
	65	Isometric views of different objects	
	66	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 – at least 1 sheet	
23rd	67	Unit-7- Common Symbols and conventions used Engg.	01
	68	Civil Engineering sanitary fitting symbols	
	69	Electrical fitting symbols for domestic interior installations	
24th	70	Electrical fitting symbols for domestic interior installations	
	71	Safety symbols used in engineering works	
	72	Unit-8- Development of surfaces (cylinder)	
25th	73	Development of surfaces (cuboids , cone)	
	74	Parallel line, radial line method The teacher may explain both methods but will use one method in sheet in classroom and other method on sketchbook	
	75	Unit-9- Detailed and assembly drawing Principle and utility of detailed and assembly drawings	
26th	76	Wooden joints i.e. corner mortise and tenon joint	
	77	Tee Halving joint, Mitre faced corner joint, Tee bridle joint	
	78	crossed wooden joint, cogged joint, dovetail joint, through Mortise and	
27th	79	tenon joint, furniture drawing – freehand and with the help of drawing instruments	
	80	Making Wooden Joint sheets in AutoCAD, rendering & showing assembly animation at least 1 sheet	
	81	Unit-10- Screw threads and threaded fasteners	
			08

28th	82	Thread Terms and Nomenclature a) Type of threads-external and internal threads, right and left hand threads (actual conventional representation), Single and multiple start thread.
	83	b) 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
	84	10.2) Nuts and Bolts a) Different views of hexagonal and square nuts. Square and hexagonal headed bolt b) Assembly of Hexagonal ended bolt and Hexagonal nut with washer.
29th	85	c) Assembly of square headed bolt with hexagonal and with washer. 10.3) Locking Devices a) Different types of locking devices-Lock nut, castle nut, split pin nut, locking Plate, Slotted nut and spring washer.
	86	b) Foundations bolts-Rag bolt Lewis bolt, Curved bolt and eye bolt. c) Drawing of various types of studs
	87	Unit-11- Keys and Cotters Various types of keys and cotters-weir practical application, drawings of various keys and cotters showing keys and cotters in position
30th	88	Various types of Joints <ul style="list-style-type: none"> • Spigot and Socket Joints • Gib and cotter joint • Knuckle joint
	89	Unit-12- Couplings Introduction to coupling, their use and types
	90	Muff coupling, Flange coupling (protected), Flexible Coupling