

LESSON PLAN

Name of faculty : Sh. Vineet Kumar & Sh. Kapil Yadav

Department : Mechanical Engineering

SEMESTER : 1st Year

SUBJECT : **ENGINEERING GRAPHICS**

Lesson Plan Duration : 35 WEEKS

WORK LOAD

(LECTURE/PRACTICAL)

PER WEEK : (3 Practical)

WEEK	PRACTICALS		DRAWING SHEET	
	LECTURE NOS	TOPIC		
1 st	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,		
2 nd	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		
3 rd	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,		
4 th	10	circles, ellipses and parabola,		
	11	Hexagonal, pentagon with the help of drawing instruments.		
	12	Definition and classification of lettering		
5 th	13	single stroke vertical		
	14	and inclined lettering at 75° (alphabet)		
	15	and inclined lettering at 75° (numerals)		
6 th	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		
7 th	19	Revised Unit-1		
	20	Revised Unit-1		
	21	SESSIONAL TEST -1		
8 th	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		
9 th	25	Practice of LINE command,		

9 th	26	Coordinates-Absolute, incremental, polar.		
	27	POLYLINE,		
10 th	28	CIRCLE(3P,2P, TTR),		
	29	ARC, ELLIPSE		
	30	Using above geometrical commands for making figure e.g. triangle,		
11 th	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,		
12 th	34	Editing commands copy, stretch,		
	35	Editing commands lengthen and explode		
	36	Use of SNAP, GRID		
13 th	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.		
14 th	40	Revised Unit-2		
	41	Revised Unit-2		
	42	SESSIONAL TEST -2		
15 th	43	Unit-3- Scales		01
	44	Scales-their needs and importance (theoretical instructions),		
	45	Types of scales,		
16 th	46	Definition of Representative Fraction (R.F.) and length of scale.		
	47	Construction of Plain and diagonal scale		
	48	Unit-4- Orthographic Projection		
17 th	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		
18 th	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		
19 th	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		
20 th	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	
22nd	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 in Engineering	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)	
73	Development of surfaces (cuboids , cone)		
25th	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	05
26th	76	Principle and utility of detailed and assembly drawings	
	77	Wooden joints i.e. corner mortise and tenon joint, Tee Halving joint, Mitre faced corner joint, Tee bridle joint ,	
	78	crossed wooden joint, coggled 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	03
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	
29th	85	b) Assembly of Hexagonal ended bolt and Hexagonal nut with washer.	
	86	c) Assembly of square headed bolt with hexagonal and with washer.	
	87	10.3) Locking Devices a) Different types of locking devices-Lock nut,	

30th	88	castle nut, split pin nut, locking Plate	
	89	Slotted nut and spring washer.	
	90	b) Foundations bolts-Rag bolt Lewis bolt, Curved bolt and eye bolt.	
31th	91	c) Drawing of various types of studs	
	92	Unit-11- Keys and Cotters	
	93	various types of keys and cotters-weir practical application,	
32th	94	drawings of various keys and cotters showing keys and cotters in position	03
	95	various types of Joints -Spigot and Socket Joints	
	96	-Gib and cotter joint -Knuckle joint	
33rd	97	Unit-12- Couplings	
	98	Introduction to coupling, their use and types	
	99	Muff coupling	
34th	100	Flange coupling (protected)	02
	101	Flexible Coupling	
	102	Revised Unit-3-6	
35th	103	Revised Unit-7-9	
	104	Revised Unit-10-12	
	105	SESSIONAL TEST	