LESSON PLAN

NAME OF FACULTY: SH PAWAN KUMAR

SEMESTER: Ist YEAR

SUBJECT: ENGINEERING GRAPHICS

LESSON PLAN DURATION: 35 WEEKS

WORK LOAD (LECTURE/PRACTICAL) PER WEEK: (3 Practical)

WEEK	PRACTICALS		
	LECTURE NOS	TOPIC	DRAWING SHEET
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 (1st angle and 3rd 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 an d 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 3rd angle)	
	56	Three views of orthographic projections of different objects (At least one sheet in 3rd 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	
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)**	**01**
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**	**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, 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**	**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**	**03**
	93	various types of keys and cotters-weir practical application,	
32th	**94**	drawings of various keys and cotters showing keys and cotters in position	
	95	various types of Joints -Spigot and Socket Joints	
	96	-Gib and cotter joint -Knuckle joint	
33rd	**97**	**Unit-12- Couplings**	**02**
	98	Introduction to coupling, their use and types	
	99	Muff coupling	
34th	**100**	Flange coupling (protected)	
	101	Flexible Coupling	
	102	**Revised Unit-3-6**	
35th	**103**	**Revised Unit-7-9**	
	104	**Revised Unit-10-12**	
	105	**SESSIONAL TEST**	