

Lesson Plan

Name of the Faculty : Ravi Rohilla/Sanjeev Kumar
 Discipline : Mechanical Engg.
 Year : 1st
 Subject : Engineering Graphics- I
 Lesson plan duration : 40 weeks (from July, 2018 to May, 2019)

Week	Practical	
	Practical Day	Topic
Week 1	1 st	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 nd	
	3 rd	
Week 2	1 st	Different types of lines in engineering drawing as per BIS specifications. Practice of vertical, horizontal and inclined lines
	2 nd	
	3 rd	
Week 3	1 st	Principles of dimensioning : Types, elements, placing, different methods of dimensioning
	2 nd	
	3 rd	
Week 4	1 st	Practice of geometrical figures such as –triangles, rectangles, circles, ellipses and parabola, hexagonal, pentagon with the help of drawing instruments.
	2 nd	
	3 rd	
Week 5	1 st	Practice of geometrical figures such as –triangles, rectangles, circles, ellipses and parabola, hexagonal, pentagon with the help of drawing instruments.
	2 nd	
	3 rd	
Week 6	1 st	Definition and classification of lettering , single stroke vertical and inclined lettering at 75o (alphabet and numerals) Freehand letter writing and sketches of various kind of objects in graph Sketch book/graph paper.
	2 nd	
	3 rd	
Week 7	1 st	2.Graphics using CAD : Meaning, requirement of computer graphics, CAD, screen structure and toolbars in AutoCAD, coordinate system, Drawing Limits, Units.
	2 nd	
	3 rd	

Week 8	1 st	Practice of LINE command, coordinates-Absolute, incremental, polar. POLYLINE, CIRCLE(3P,2P, TTR), ARC, ELLIPSE
	2 nd	
	3 rd	
Week 9	1 st	Using above geometrical commands for making figure e.g. triangle, rectangle, hexagon, pentagon, parabola. Editing commands-Scale, erase, copy, stretch, lengthen and explode.
	2 nd	
	3 rd	
Week 10	1 st	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.
	2 nd	
	3 rd	
Week 11	1 st	3.Scales: Scales-their needs and importance(theoretical instructions), types of scales, definition of Representative Fraction(R.F.) and length of scale.
	2 nd	
	3 rd	
Week 12	1 st	Construction of Plain and diagonal scale.
	2 nd	
	3 rd	
Week 13	1 st	4.Orthographic Projection: Theory of orthographic projections (Elaborate theoretical instructions) . Projections of points in different quadrants
	2 nd	
	3 rd	
Week 14	1 st	Projection of line (1 st angle and 3 rd angle) 1 Line parallel to both planes 2 Line perpendicular to any one of the principal plane 3 Line inclined to any one of the principal plane and parallel to other
	2 nd	
	3 rd	
Week 15	1 st	Projection of Solid-Cube, Cuboid, Cone, Prism, pyramid
	2 nd	
	3 rd	
Week 16	1 st	Three views of orthographic projections of different objects (At least one sheet in 3 rd angle)
	2 nd	
	3 rd	
Week 17	1 st	Making above sheets in AutoCAD of:- point line solids and two objects
	2 nd	
	3 rd	

Week 18	1 st	5. Sectioning and Identification of surfaces: Identifications of surfaces, Importance and salient features of sectioning of objects.
	2 nd	
	3 rd	
Week 19	1 st	Description of full section, half section partial or broken out sections, Offset Sections, revolved sections and removed sections.
	2 nd	
	3 rd	
Week 20	1 st	6. Isometric Views: Fundamental of isometric projections and isometric scale , Isometric views of different objects
	2 nd	
	3 rd	
Week 21	1 st	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
	2 nd	
	3 rd	
Week 22	1 st	7. Common Symbols and conventions used in Engineering : 1.Civil Engineering sanitary fitting symbols 2 Electrical fitting symbols for domestic interior installations 3 Safety symbols used in engineering works
	2 nd	
	3 rd	
Week 23	1 st	8. Development of surfaces (cylinder, cuboid, cone): Parallel line, radial line method
	2 nd	
	3 rd	
Week 24	1 st	9. Detailed and assembly drawing: Principle and utility of detailed and assembly drawing. Wooden joints i.e. corner mortise and tenon joint, Tee Halving joint, Mitre faced corner joint, Tee bridle joint
	2 nd	
	3 rd	
Week 25	1 st	Crossed wooden joint, cogged joint, dovetail joint, through Mortise and tenon joint, furniture drawing – freehand and with the help of drawing instruments
	2 nd	
	3 rd	
Week 26	1 st	Making Wooden Joint sheets in AutoCAD, rendering & showing assembly animation at least 1 sheet
	2 nd	
	3 rd	
Week 27	1 st	10. Screw threads and threaded fasteners: Thread Terms and Nomenclature. Type of threads-external and internal threads, right and left hand threads, Single and multiple start thread.
	2 nd	
	3 rd	
Week 28	1 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)
	2 nd	
	3 rd	

Week 29	1 st	Nuts and Bolts: Different views of hexagonal and square nuts. Square and hexagonal headed bolt. Assembly of Hexagonal ended bolt and Hexagonal nut with washer.
	2 nd	
	3 rd	
Week 30	1 st	Assembly of square headed bolt with hexagonal and with washer.
	2 nd	
	3 rd	
Week 31	1 st	Locking Devices: Different types of locking devices-Lock nut, castle nut, split pin nut, locking plate, slotted nut and spring washer.
	2 nd	
	3 rd	
Week 32	1 st	Foundations bolts- Rag bolt, Lewis bolt, Curved bolt and eye bolt. Drawing of various types of studs
	2 nd	
	3 rd	
Week 33	1 st	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.
	2 nd	
	3 rd	
Week 34	1 st	Various types of Joints -Spigot and Socket Joints
	2 nd	
	3 rd	
Week 35	1 st	-Gib and cotter joint
	2 nd	
	3 rd	
Week 36	1 st	-Knuckle joint
	2 nd	
	3 rd	
Week 37	1 st	12. Couplings: Introduction to coupling, their use and types
	2 nd	
	3 rd	
Week 38	1 st	Muff coupling
	2 nd	
	3 rd	
Week 39	1 st	Flange coupling (protected)
	2 nd	
	3 rd	

	1 st	
Week 40	2 nd	Flexible Coupling
	3 rd	