

Lesson Plan

Name of the Faculty : MANITA
 Discipline : Electronics & Communications Engg.
 Year/Semester : 1st Year (Annual System)
 Subject : **ENGINEERING GRAPHICS**
 Lesson Plan duration : 36 weeks
 Work load per week : Lecture – 00, Practical – 03

Week	Practical	
	Practical Day	Topic
1 st	1 st	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. Different types of lines in engineering drawing as per BIS specifications Practice of vertical, horizontal and inclined lines Principles of dimensioning: Types, elements, placing, different methods of dimensioning
2 nd	2 nd	1.5 Practice of geometrical figures such as –triangles, rectangles, circles, ellipses and parabola, hexagonal, pentagon with the help of drawing instruments.
3 rd	3 rd	Definition and classification of lettering, single stroke vertical and inclined lettering at 750 (alphabet and numerals) Freehand letter writing and sketches of various kind of objects in graph Sketch book/graph paper.
4 th	4 th	Unit:- 2 Graphics using CAD Meaning, requirement of computer graphics, CAD, screen structure and toolbars in AutoCAD, coordinate system, Drawing Limits, Units. Practice of LINE command, coordinates-Absolute, incremental, polar. POLYLINE, CIRCLE(3P,2P, TTR), ARC, ELLIPSE
5 th	5 th	Using above geometrical commands for making figure e.g. triangle, rectangle, hexagon, pentagon, parabola. 2.4 Editing commands-Scale, erase, copy, stretch, lengthen and explode
6 th	6 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.

7 th	7 th	Unit:-3 Scales 3.1 Scales-their needs and importance (theoretical instructions), types of scales, definition of Representative Fraction (R.F.) and length of scale.
8 th	8 th	3.2 Construction of Plain and diagonal scale.
9 th	9 th	1st Internal Assessment Exam (Tentative)
10 th	10 th	Unit:-4 Orthographic Projection Theory of orthographic projections (Elaborate theoretical instructions) Projections of points in different quadrants Projection of line (1st angle and 3rd angle) 4.3.1 Line parallel to both planes
11 th	11 th	4.3.2 Line perpendicular to any one of the principal plane 4.3.3 Line inclined to any one of the principal plane and parallel to other.
12 th	12 th	Projection of Solid-Cube, Cuboid, Cone, Prism, pyramid Three views of orthographic projections of different objects (At least one sheet in 3rd angle)
13 th	13 th	4.6 Making above sheets in AutoCAD of:- point line solids and two objects
14 th	14 th	Unit:- 5 Sectioning and Identification of surfaces 5. 1 Identifications of surfaces, Importance and salient features of sectioning of objects
15 th	15 th	5. 2 Description of full section, half section partial or broken out sections, Offset Sections, revolved sections and removed sections
16 th	16 th	Unit:- 6 Isometric Views 6.1 Fundamental of isometric projections and isometric scale
17 th	17 th	6.2 Isometric views of different objects
18 th	18 th	6.3 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
19 th	19 th	Unit:- 7 Common Symbols and conventions used in Engineering 7.1 Civil Engineering sanitary fitting symbols
20 th	20 th	2nd Internal Assessment Exam (Tentative)
Winter Vacations 25.12.2018 to 08.01.2019		
21 st	21 st	7.2 Electrical fitting symbols for domestic interior installations 7.3 Safety symbols used in engineering works
22 nd	22 nd	Unit:-8 Development of surfaces (cylinder, cuboid, cone) 8.1 Parallel line, radial line method
23 rd	23 rd	Unit:-9 Detailed and assembly drawing 9.1 Principle and utility of detailed and assembly drawings
24 th	24 th	9.2 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, through Mortise and tenon joint, furniture drawing – freehand and with the help of drawing instruments
25 th	25 th	9.3 Making Wooden Joint sheets in AutoCAD, rendering & showing assembly animation at least 1 sheet
26 th	26 th	Unit:- 10 Screw threads and threaded fastener 10.1 Thread Terms and Nomenclature
27 th	27 th	10.1.1 Type of threads-external and internal threads, right and left hand threads (actual conventional representation), Single and multiple start thread.
28 th	28 th	10.1.2 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)
29 th	29 th	10.2. Nuts and Bolts 10.2.1 Different views of hexagonal and square nuts. Square and hexagonal headed bolt.
30 th	30 th	10. 2. 2 Assembly of Hexagonal ended bolt and Hexagonal nut with washer. 10. 2. 3 Assembly of square headed bolt with hexagonal and with washer.
31 st	31 st	10. 3. Locking Devices 10. 3. 1 Different types of locking devices-Lock nut, castle nut, split pin nut, locking plate, slotted nut and spring washer.
32 nd	32 nd	10. 3. 2 Foundations bolts-Rag bolt, Lewis bolt, Curved bolt and eye bolt. 10. 3. 3 Drawing of various types of studs
33 rd	33 rd	Unit :- 11 Keys and Cotters 11. 1 Various types of keys and cotters-weir practical application, drawings of various keys and cotters showing keys and cotters in position
34 th	34 th	11. 2 Various types of Joints -Spigot and Socket Joints -Gib and cotter joint -Knuckle joint
35 th	35 th	Unit:- 12 Couplings Introduction to coupling, their use and types Muff coupling
36 th	36 th	Flange coupling (protected) Flexible Coupling