LESSON PLAN JAN 2026 SESSION

Name of Faculty Umesh Saroj

Discipline: ECE

Semester: 2nd

Subject: Engineering Graphics

Duration: 15 Weeks

Teaching Load 6 Hours practical/week

Week	Day Lecture	Topic
1 **UNIT-I**	1	**Introduction to Engineering Drawing and Graphics:** Introduction to Engineering Drawing and Graphics, Symbols and conventions-Conventions of Engineering Materials
	2	Sectional Breaks and Conventional lines, Civil Engineering Sanitary fitting symbols, Electrical fitting symbols for domestic interior installations.
2	1	**Geometrical construction**-geometrical figures such as triangles, rectangles, circles, ellipses and curves, hexagons, pentagons bisecting a line and arc , division of line and circle with the help of drawing instruments.
	2	**Technical Lettering of Alphabet and Numerals:** Definition and classification of lettering, Free hand (of height of 5,8,12 mm) and instrumental lettering (of height 20 to 35 mm) : upper case and lower case, single and double stroke
3	1	Vertical and inclined (Gothic lettering) at 75 degree to horizontal and with suitable height to width ratio 7:4.
	2	**Dimensioning:** Necessity of dimensioning, method and principles of dimensioning (mainly theoretical instructions).
4	1	Dimensioning of overall sizes, circles, threaded holes, chamfered surfaces, angles, tapered surfaces,
	2	Holes, equally spaced on P.C.D., countersunk holes, counter bored holes, cylindrical parts, narrow spaces and gaps, radii, curves and arches.
5	1	**Scales: Scales –**Needs and importance (theoretical instructions), Type of scales, Definition of Representative Fraction (R.F.) and Length of Scale.
	2	To draw/construct plain and diagonal scales.
6	1	Revision and doubt Session
	2	1st sessional
7. **UNIT II**	1	**Orthographic Projections:** Theory of orthographic projections (Elaborate theoretical instructions). Three views of orthographic projections of different objects of given pictorial view of a block in 1st and 3rd angle.
	2	Projection of Points in different quadrant, Projection of Straight Line (1st angle), Line parallel to both the planes
8	1	Line perpendicular to any one of the reference plane and parallel to others, Line inclined to any one of the references and parallel to another plane.

	2	**Projection of Plane** – Different lamina like square rectangular, triangular, circle and Hexagonal pentagon. Trace of planes (HT and VT). Identification of surfaces.
9	1	**Sectioning:** Importance and salient features, Drawing of full section, half section, partial or broken out sections, Offset sections, revolved sections and removed sections (theoretical only).
	2	Orthographic sectional views of different objects.
10	1	Revision and doubt Session
	2	2nd sessional
11 **UNIT III**	1	Introduction of projection of right solids such as prism & pyramid (square, Pentagon, Hexagonal) cube, cone & cylinder (Axes perpendicular to H.P and parallel to V.P.) Introduction of sections of right solids - Section planes, Sections of Hexagonal prism, pentagon pyramid, cylinder and cone (Section plane parallel to anyone reference planes and perpendicular to V.P. and inclined to H.P.)
	2	Development of Surfaces – Development of lateral surfaces of right solids like cone, cylinder, pentagonal prism, pyramid and hexagonal pyramid (Simple problems)
12 **UNIT IV**	1	**Isometric Views** Fundamentals of isometric projections and isometric scale. Isometric views of different laminas like circle, pentagon and hexagon.
	2	Isometric views of different regular solids like cylinder, cone, cube, cuboid, pyramid and prism. Isometric views from given different orthographic projections(front, side and top view)
13 **UNIT-V**	1	**Introduction to AutoCAD** Basic introduction and operational instructions of various commands in AutoCAD. At least two sheets of different objects on AutoCAD (given pictorial/isometric view of a block).
	2	AutoCAD skill of student is evaluated in internal assessment only not in external exam.
14	1	Revision and doubt Session
	2	3rd sessional
15	1	Revision
	2	Revision

Note First angle projection is to be followed. Minimum of 20 sheets to be prepared and at least 2 sheets on AutoCAD.

RECOMMENDED BOOKS

1. A Text Book of Engineering Drawing by Surjit Singh; Dhanpat Rai & Co.,Delhi
2. Engineering Drawing by PS Gill; SK Kataria & Sons, NewDelhi
3. Elementary Engineering Drawing in First Angle Projection by ND Bhatt;Charotar Publishing House Pvt. Ltd.,Anands
4. Engineering Drawing and Graphics using AutoCAD by T. Jeyapoovan,Vikas Publishing House Pvt, Ltd Noida.
5. A Text Book of Engineering Drawing by S.R.Singhal and O.P.Saxena, Asian Publisher, Delhi
6. Engineering Drawing by RB Gupta, Satya Prakashan, New Delhi

NPTEL link https://nptel.ac.in/courses/112105294