UTKAL GOURAV MADHUSUDAN INSTITUTE OF TECHNOLOGY, RAYAGADA
Academic Lesson Plan for 1st Semester – 2024 (Winter)

Name of teaching faculty: Sri Chinmaya Maharana
Guest Faculty (Civil)

Discipline   : Civil engg.
Deptt   : Mathematics & Science
Semester   : 1st
Subject (Practical)   : PR3(a): Engineering Graphics

No. of periods per week: 4,   Total Periods: 60

End semester Exam: 75 Marks,   Sessional: 25 Marks,

Total Marks: 100 Marks,

Week	Date	Period	Unit/ Chapter	Topics to be covered
1st		2	1	**Basic elements of Drawing**- Drawing Instruments and supporting materials: method to use them with applications.
		2	1	Convention of lines and their applications.
2nd		2	1	Representative Fractions – reduced, enlarged and full size scales; Engineering Scales such as plain scale.
		2	1	diagonal scale.
3rd		2	1	Dimensioning techniques as per SP-46:2003 – types and applications of chain, parallel and coordinate dimensioning.
		2	1	Geometrical and Tangency constructions.(Redraw the figure)
4th		2	2	Orthographic projections- Introduction of projections-orthographic, perspective
		2	2	Isometric and oblique: concept and applications. (No question to be asked in examination).
5th		2	2	Introduction to orthographic projection
		2	2	First angle and Third angle method, their symbols.
6th		2	2	Conversion of pictorial view into Orthographic Views – object containing plain surfaces.
		2	2	Slanting surfaces, slots, ribs.
7th		2	2	Cylindrical surfaces. (use First Angle Projection method only)
		2	3	Isometric Projections- Introduction to isometric projections. Isometric scale and Natural scale.
8th		2	3	Isometric view and isometric projection. Illustrative problems related to objects containing lines, circles and arcs shape only.
		2	3	Conversion of orthographic views into isometric view/projection.

9th		2	4	Free Hand Sketches of engineering elements- Free hand sketches of machine elements: Thread profiles.
		2	4	nuts, bolts.
10th		2	4	Studs, set screws, washer.
		2	4	Locking arrangements. (For branches other than mechanical Engineering, the teacher should select branch specific elements for free hand sketching)
11th		2	4	Free hand sketches of orthographic view (on squared graph paper)
		2	4	Free hand sketches of isometric view (on isometric grid paper)
12th		2	5	Computer aided drafting interface- Computer Aided Drafting: concept. Hardware and various CAD software available. System requirements and Understanding the interface.
		2	5	Components of AutoCAD software window: Title bar, standard tool bar, menu bar, object properties tool bar, draw tool bar, modify tool bar, cursor cross hair. Command window, status bar, drawing area, UCS icon.
13th		2	5	File features: New file, Saving the file, Opening an existing drawing file, Creating templates, Quit. Setting up new drawing: Units, Limits, Grid, Snap. Undoing and redoing action.
		2	6	Computer aided drafting- Draw basic entities like Line, Circle, Arc, Polygon, Ellipse, Rectangle, Multiline, PolyLine.
14th		2	6	Method of Specifying points: Absolute coordinates, Relative Cartesian and Polar coordinates. Modify and edit commands like trim, extend, delete, copy, offset, array, block, layers.
		2	6	Dimensioning: Linear, Horizontal Vertical, Aligned, Rotated, Baseline, Continuous, Diameter, Radius and Angular Dimensions.
15th		2	6	Dim scale variable. Editing dimensions. Text: Single line Text, Multiline text.
		2	6	Standard sizes of sheet. Selecting Various plotting parameters such as Paper size, paper units, Drawing orientation, plot scale, plot offset, plot area, print preview

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