SEMESTER PLAN

Civil Engineering Drawing-3 (CAD)-(66464)

6th Semester,Civil Wood Technology.

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Theory Class		
Week	**Topic**	**Description**
1	Lecture-1 Topic-(1.1-1.2)	1.1 Explain How to starts Auto CAD software and identify the different areas of CAD graphic screen. 1.2 Describe the use menu bar, command window and toolbar.
	Lecture-2 Topic-(1.3-1.4)	1.3 Express the Cartesian co-ordinate system. 1.4 Explain how to save the drawing & exit from the file.
2	Lecture-3 Topic-(2.1-2.2)	2.1 State the meaning of WCS icon and UCS icon. 2.2 Mention the classifications of co-ordinate system.
	Lecture-4 Topic-(2.3-2.4)	2.3 State the necessity of drawing units and limits. 2.4 Mention the functions of the following editing commands: copy, move, array, offset, trim, fillet, chamfer, extend, break, rotate, stretch, mirror, change, chprop, scale and pedit.
3	Lecture-5 Topic-(2.5-2.6)	2.5 Mention the functions of the following object grouping commands: block, insert, explode, w block, divide, measure, purge, xref etc. 2.6 Mention the functions of the following enquiry commands: dist, area, Id, list etc.
	Lecture-6 Topic-(2.7-2.8)	2.7 Mention the functions of the following plotting commands: layout, view port, model space, paper space. 2.8 Mention the functions of the following dimension commands: dimension style, Ddim, leader, linear dimension, radius & diameter dimension, aligned dimension, continue dimension, base dimension etc.
4	Lecture-7	*Quiz test-1*
	Lecture-8 Topic-(2.9-2.10)	2.9 Mention the functions of the following geometric commands: donut, solid, trace, pline, xline, ray, fill, hatch and text etc. 2.10 State the functions of Auto CAD design center (ADC).
5	Lecture-9 Topic-(3.1-3.2)	3.1 Describe the process of drawing the site plan and layout plan of a multistoried framed structure building. 3.2 Describe the process of drawing the plan, elevation and sectional elevation of a multi-storied framed structure building.
	Lecture-10	Class test-1
6	Lecture-11 Topic-(3.3-3.4)	3.3 Describe the process of making the detailed drawing of beam, roof slab and lintel of multi-storied building. 3.4 Describe the process of making the detailed drawing of staircase, lift core and ramp of multi-storied building.

		Lecture-12 Topic-(3.4-3.5)	3.4 Describe the process of making the detailed drawing of staircase, lift core and ramp of multi-storied building. 3.5 Mention the advantages of making the necessary drawings of multistoried framed structure building using CAD.
7		Lecture-13 Topic-(4.1-4.2)	4.1 Explain about starting 3D. 4.2 Explain how to create 3D objects / model.
		Lecture-14	Revision class
8			Mid term
9		Lecture-15 Topic-(4.3-4.4)	4.3 Explain how to draw isometric view. 4.4 Explain about Edgesurf, Rulesurf, Tabsurf & Mesh.
		Lecture-16 Topic-(4.5-4.6)	4.5 Explain the uses of Co-ordinate system in Auto CAD. 4.6 Explain how to create surface modeling.
10		Lecture-17 Topic-(4.6-4.7)	4.6 Explain how to create surface modeling. 4.7 Explain the use of 3D editing commands.
		Lecture-18 Topic-(5.1-5.2)	5.1 Explain how to creating perspective view. 5.2 Describe the use of distance and camera in perspective view. .
11		Lecture-19 Topic- (5.3-5.4)	5.3 Describe the rendering and materials effect in 3D. 5.4 Describe the uses & set up of background in 3D.
		Lecture-20 Topic- (5.5-5.7)	5.5 Describe the lighting & shadow in 3D. 5.6 Describe the uses of showing images in 3D. 5.7 Explain how to print 3D view.
12		Lecture-21	Class test-2
		Lecture-22 Topic- (6.1-6.2)	6.1 Define layout for plot/print using paper space and model space. 6.2 State the scale & assign pen (if necessary) for plot/print.
13		Lecture-23 Topic- (6.3-6.4)	6.3 Describe the paper & plotter for plotting/printing. 6.4 Describe the process of Plot/Print the drawing.
		Lecture-24 Topic- (6.5-6.6)	6.5 Discuss about various drawing in different scale in a paper through layout. 6.6 Describe the process of drawing in PDF format.
14		Lecture-25	Revision class (1.1-1.4)
		Lecture-26	Quiz test-2
15		Lecture-27	Revision class (2.1-2.10)
		Lecture-28	Revision class (3.1-3.5)
16		Lecture-29	Revision class (4.1-4.7)
		Lecture-27	Revision class (5.1-6.6)

Practical:

Week	Practical No	Practical Name
1	1	1.1 Start CAD software and identify the different areas of CAD graphic screen. 1.2 Use menu bar, command window and toolbar. 1.3 Perform the Cartesian co-ordinate system. 1.4 Save the drawing & exit from the file.
2	2	2.1. Draw the floor plan in 1:50 scale of a 3- bedroom house. 2.2. Show the inside and outside detail dimension in the drawn plan (1.1). 2.3. Draw Front and side elevation (minimum one) in 1:50 scale of the 2- bedroom house 2.4. Draw section in 1:50 scale of the 3- bedroom house showing all dimension and material symbol. 2.5. Draw dining, drawing, kitchen, toilet etc. using above scale. 2.6. Make a finish schedule of the residence.
3	3	3.1. Draw the detail ground floor plan of a doglegged staircase in 1:50 scale. 3.2. Draw the detail typical floor plan of a doglegged staircase in 1:50 scale. 3.3. Draw the section of the doglegged staircase in 1:50 scale with dimension. 3.4. Draw the detail of steps, nosing, handrail etc. of the staircase. 3.5. Draw the detail plan & section of a three quarter stair in 1:50 scale with dimension..
4	4	4.1. Draw the kitchen plan in 1:20 scale of the 3- bedroom house (1.1). 4.2. Draw the kitchen fixtures in 1:20 scale on the drawn plan (3.1). 4.3. Draw two detail section of the kitchen through sink & burner/range in 1:20 scale showing all dimension. 4.4. Draw the cabinet detail showing all dimensions.
5	5	5.1. Draw a master bath plan in 1:20 scale showing fixtures (Cabinet Basin, Bathtub, W.C. etc.) with all dimensions. 5.2. Draw the detail section of the master bath in 1:20 scale showing maximum fixtures and all dimensions. 5.3. Draw the toilet/bath plan in 1:20 scale showing fixtures (Basin, Shower tray, Long Pan/Indian Pan etc.) with all dimensions. 5.4. Draw the detail section of the toilet in 1:20 scale showing maximum fixtures and all dimensions.
6	6	6.1. Draw the various diameter water supply pipe. 6.2. Draw various diameter pipes for drainage water. 6.3. Draw various types of fittings using water supply and sanitation. 6.4. Draw various types of fixtures using water supply and sanitation.
7	7	7.1. Draw water supply and sewage pipe line as per layout. 7.2. Draw the plumbing fixtures & fittings on the floor plan. 7.3. Make a legend of electrical fixture & fittings.
8	8	8.1. Make a layer for electrical layout of floor plan.

		8.2. Draw the electrical fixtures & fittings on the floor plan.
		8.3. Make a layer for electrical layout of floor plan.
		8.4. Draw the electrical fixtures & fittings on the floor plan.
		8.5. Make a legend of electrical fixture & fittings.
		8.6. Draw circuit diagram of the floor plan.
9	9	9.1. Draw the sectional plan of a two span RCC box culvert. 9.2. Draw the cross section of a two span RCC box culvert. 9.3. Draw the long section of a two span RCC box culvert. 9.4. Show the long section arrangement in the decking of the two spans RCC box culvert.
10	10	10.1 Draw a half top plan and half plan (decking and earth removed) of RCC T-beam decking bridge with splayed type wing wall. 10.2 Draw a sectional elevation of RCC T-beam decking bridge. 10.3 Draw the cross section of RCC T-beam decking bridge showing the reinforcement. 10.4 Show the details of T-beam of RCC T-beam bridge. 10.5 Show the details of wing wall, turn wall, railing and bed block of RCC T-beam bridge.
11	11	11.1 Draw a drawing of steel truss for factory. 11.2 Draw a drawing of steel truss with simple building.
12	12	12.1 Create simple 3D object in auto CAD. 12.2 Draw isometric view. 12.3 Create 3D surface by using 3D poly, Edge surf, Rule surf, Tab surf & Mesh. 12.4 Edit / draw 3D object using polar co-ordinate system. 12.5 Edit 3D object using different editing command i. e. align, 3D rotate, 3Darray 3D, mirror, 3D, move, chamfer, fillet, trim etc.
13	13	13.1 Create 3D surface/object by using extrude. 13.2 Edit 3d object using union command 13.3 Draw 3d object using revolves command. 13.4 Edit / draw 3D object using intersect command. 13.5 Edit 3D object using subtracts command.
14	14	14.1 Draw the plan of wooden paneled door in scale 1:20 14.2 Draw the elevation & section of paneled door in scale 1:20 14.3 Draw the plan of wooden flush door in scale 1:20 14.4 Draw the elevation & section of flush door in scale 1:20 14.5 Draw the plan of wooden glazed door in scale 1:20 14.6 Draw the elevation & section of glazed door in scale 1:20
15	15	15.1 Draw detail section of wooden frame/chowkat in scale 1:20 15.2 Draw detail section of wooden paneled door and shutter in scale 1:20 15.3 Draw detail of flush door in scale 1:20 15.4 Draw detail of glazed door in scale 1:20
16	16	16.1 Draw the plan of Aluminum sliding door in scale 1:20 16.2 Draw the elevation & section of Aluminum sliding door in scale 1:20 16.3 Draw the plan of Aluminum swing door in scale 1:20 16.4 Draw the elevation & section Aluminum swing door in scale 1:20
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18	18	18.1 Create layout for plot/print using paper space and model space. 18.2 Set up the scale & assign pen (if necessary) for plot/print.

		18.3 Select the paper & plotter for plotting/printing.
		18.4 Plot/Print the drawing.
		18.5 Set various drawing in different scale in a paper through layout.
		18.6 Save the drawing in PDF format.
19	19	19.1 Set the distance create perspective view.
		19.2 Set the camera to draw the perspective view.
		19.3 Draw perspective view of an object using 3D view command.
		19.4 Set the material from material library for rendering.
		19.5 Set the background color / image for rendering.
		19.6 Set the light & create shadow using different command.
		19.7 Draw perspective view of an object with full rendering.
20	20	20.1 Fix up the door & window in the model
		20.2 Add roof slab over the wall
		20.3 Fix up all necessary elements of mode
		20.3 Beautification the model
		20.5 Run the model

REFERENCE BOOKS:

1. Internet source
2. Working Drawing - I – BTEB
3. Time Saver Standard- Building Type
4. Auto CAD - Samuel A Mallick
Engr. Md. Shah Alam