

CIVIL ENGINEERING DRAWING (CAD)-I

Week	Period	Topics	Subtopics	Methodology
1 st	1 st	1.1 Define isometric view. 1.2 Identify isometric scale. 1.3 State the advantages of drawing isometric view. 1.4 Differentiate orthographic views and isometric view.	1.1-1.4	Lecture & Discussion
	Practical	1.1 Draw the isometric view of rectangular and circular lamina. 1.2 Draw the isometric projection of solids such as cube, cylinder and steps from different orthographic views. 1.3 Translate the isometric views of different engineering components from orthographic views. 1.4 Translate the orthographic views of different engineering components from isometric views.		
	Practical	2.1 Draw the line plan of a single storied simple building with verandah. 2.2 Draw plan over plinth of simple building with verandah from the line plan as started in 2.1. 2.3 Draw front and side elevation of the simple building started in 2.2 2.4 Draw the cross section of simple building as started in 2.2 2.5 Assemble plan over plinth, sections and elevations of simple building with proper dimensions, heading and title block in proper places on one sheet according to given data. 2.6 Draw the isometric view of a given single roomed building showing front and one side elevation.		
2 nd	1 st	2.1 Identify the name of different parts of building. 2.2 Define line plan of a building. 2.3 Describe the plan over plinth of simple building. 2.4 Explain the necessity of drawing, plan, elevation and section of building. 3.1 State the use of code and symbols in drawing. 3.2 Explain the necessity of covering for steel reinforcement according to code.	2.1-3.2	Lecture & Discussion
	Practical	3.1 Use the different types of design code. 3.2 Use clear cover for protection of reinforcing steel according to code. 3.3 Use anchorage of reinforcing steel according to code. 3.4 Use minimum thickness of structural members according to code. 3.5 Use minimum width of beam according to code. 3.6 Use minimum requirement of reinforcement according to code.		
	Practical	4.1 Draw the standard hooks and bends according to code. 4.2 Draw the compression joints in reinforcing steel. 4.3 Draw the tensile joints in reinforcing steel. 4.4 Prepare a bar-schedule with specification of reinforcing steel. 4.5 Draw the construction, expansion & contraction joints.		
3 rd	1 st	Quiz Test-1 3.3 Describe the significance of minimum thickness of structural member according to code. 3.4 Explain the necessity of hooks, bend and lapping as per code. 3.5 Define construction joint and expansion joint as per code.	3.3-3.5	Question & Answer
	Practical	5.1 Draw timber floor. 5.2 Draw typical cement concrete (CC) floor over single brick flat soling. 5.3 Draw the typical reinforced cement concrete (RCC) floor.		
	Practical	6.1 Draw the brick spread foundation for eccentric loading. 6.2 Draw the brick spread foundation for soft soil.		

		6.3 Draw the brick spread foundation on sloped ground.		
4th	1 st	4.1 Define the meaning of detail drawing. 4.2 Mention the necessity of detail drawing. 4.3 List different types of spread foundation. 4.4 List different types of RCC footing. 4.5 List different types of floors.	4.1-4.5	Lecture & Discussion
	Practical	6.4 Draw the brick wall with RCC footing. 6.5 Draw the RCC inverted T-beam footing. 6.6 Draw the RCC cantilever footing.		
	Practical	7.1 Draw the detail drawing of RCC cast-in-situ piles. 7.2 Draw sections of a square pre-cast RCC pile. 7.3 Draw the cross-section of a pile cap over a group of piles. 7.4 Draw the shoe of a pile.		
5th	1 ^s	Quiz Test-2 5.1 Define the terms pile. 5.2 Mention the functions of pile cap. 5.3 List different types of piles used. 5.4 Explain the necessity of piles grouping.	5.1-5.4	Question & Answer
	Practical	8.1 Draw the right of way of a national highway in the embankment. 8.2 Draw the cross-section of bituminous road on embankment showing foundation details. 8.3 Draw the cross-section of rigid pavement on embankment showing foundation details.		
	Practical	9.1 Draw the elevation of a paneled door. 9.2 Draw horizontal section of paneled door cutting plane passing through panels. 9.3 Draw vertical section of paneled door cutting plane passing through panels. 9.4 Draw the horizontal cross-section and elevation of metal window. 9.5 Draw the horizontal and vertical section of a fully glazed window.		
6th	1 st	Class Test-1		
	Practical	10.1 Draw elevation of king post/queen post roof truss on 25cm thick brick wall. 10.2 Make detail (working) drawing of heel joint of wooden truss. 10.3 Make detail (working) drawing of ridge of wooden truss. 10.4 Make detail (working) drawing of joint (intermediate point) of beam in wooden truss.		
	Practical	11.1 Draw elevation of steel truss (pratt truss/warren truss) rests on 25cm x25cm RCC column. 11.2 Make detail drawing of heel joint of steel truss rests on RCC column. 11.3 Make detail drawing of ridge joint of steel truss. 11.4 Make detail drawing of joint on the rafter of steel truss. 11.5 Make detail drawing of joint on the tie beam of steel truss.		
7th	1 st	6.1 List different types of road 6.2 List different types of joints in rigid pavement 6.3 State the meaning of right of way. 6.4 Identify different components of a rigid pavement. 6.5 Identify different components of a flexible road.	6.1-6.5	Lecture & Discussion
	Practical	12.1 Make a Auto CAD new file 12.2 Set up the units, display formats and precision of measurements. 12.3 Set up the drawing limits.		

		12.4 Make a grid of dots similar to graph paper.		
	Practical	13.1 Draw a line using Auto CAD. 13.2 Draw triangles using Auto CAD. 13.3 Draw different types of rectangles using Auto CAD. 13.4 Draw different types of polygons using Auto CAD. 13.5 Draw circles, arcs, etc using Auto CAD. 13.6 Save the existing drawing using AutoCAD.		
8th	Mid Term Examination			
9th	1 st	7.1 List different types of doors 7.2 Label different parts of doors. 7.3 List different types of windows. 7.4 Label different parts of windows. 8.1 Define the term truss. 8.2 Label different parts of a wooden truss. 8.3 Label different parts of a steel truss.	7.1-8.3	Lecture & Discussion
	Practical	14.1 Erase a line using commands. 14.2 Un erase an erased line using undo and redo commands. 14.3 Magnify a portion of the drawing to look closely. 14.4 Regenerate the whole drawing. 14.5 Trim and extend a portion of a line, area, curve or any object. 14.6 Move and copy a drawing from one place to another. 14.7 Use commands to filled lines, areas and circles.		
	Practical	14.8 Use commands to chamfer lines. 14.9 Perform the uses of the following commands: array, offset, break, rotate, stretch, mirror, change, scale, pedit and explode. 15.1 Select a drawing file for dimensioning. 15.2 Use commands to add linear dimensions in the drawing. 15.3 Use commands to add angular dimensions in the drawing. 15.4 Use commands to modify dimension style in the drawing.		
10 th	1 st	Quiz Test-3 8.4 Distinguish between king post and queen post truss. 9.1 Define AutoCAD. 9.2 State how to start and exit AutoCAD. 9.3 Name different tools used in AutoCAD. 9.4 Explain the necessity of editing drawing. 9.5 State the necessity of drawing units and limits.	8.4-9.5	Question & Answer
	Practical	16.1 Create different layers for line, dimension, text, hatches, etc. 16.2 Select different color for different layer. 16.3 Select the type and scale of the hatch for a drawing. 16.4 Select the type and size of the text for a drawing. 16.5 Insert text in the drawing. 16.6 Perform the uses of the following plotting commands: layout, view port, model space, paper space.		
	Practical	17.1 Select the type and size of the text for a drawing. 17.2 Insert text in the drawing.		

		17.3 Perform the uses of the following plotting commands: layout, view port, model space, paper space. 17.3 Plot the drawing. 17.4 Plot each layer of the drawing separately.		
11th	1 st	9.6 Mention the functions of the following editing commands: copy, move, array, offset, trim, fillet, chamfer, extend, break, rotate, stretch, mirror, change, scale and pedit. 9.7 State how to draw of the following draw commands: line, triangles, rectangle, polygons, circles, arcs, etc. 9.8 Mention the functions of the following commands: zoom, pan, undo, redo, save, etc. 9.9 Mention the functions of the following dimension commands: dimension style, linear dimension, aligned dimension, etc. 9.10 State the insertion of text in drawing using AutoCAD.	9.6-9.10	Lecture & Discussion
	Practical	4th Quiz Test		
	Practical	18.1 Compose the data of plan for a single storied building using AutoCAD.		
	Practical	18.2 Draw a plan of a single storied building using AutoCAD.		Question & Answer
12th	1 st	2nd class test		
	Practical	18.3 Compose the data of elevation for a single storied building using AutoCAD.		
	Practical	18.4 Draw the elevation of a single storied building using AutoCAD.		
13th	1 st	9.11 Mention the functions of hatch in drawing using AutoCAD. 9.12 Mention the advantages of layers in drawing using AutoCAD. 9.13 Mention the functions of the following plotting commands: layout, view port, model space, paperspace.	9.11-9.13	Lecture & Discussion
	Practical	18.5 Compose the data of section of a single storied building using AutoCAD. 18.6 Draw the section of a single storied building using AutoCAD.		
	Practical	Review of Classes		