

Mark Distribution (for 150 Marks)			
Theory Marks		Practical Marks	
Midterm	10	PC	50
Class test	05	PF	50
Quiz test	05	-	-
Final	30	-	-
Total	50	Total	100

Subject Teacher : Md. Emon Khan (Jr. Instructor)
Subject Name : Civil CAD - 2
Subject Code : 26452
Technology : Civil
Semester : 5th
BTEB Textbook : Civil CAD - 2 (Publisher: Haque Publication)

Marks	Grade Point	Letter Grade	Marks	Grade Point	Letter Grade
80>	4.00	A+	55-59	2.75	B-
75-79	3.75	A	50-54	2.50	C+
70-74	3.50	A-	45-49	2.25	C
65-69	3.25	B+	40-44	2.00	D
60-64	3.00	B	0-39	0.00	F

Class Timing Distribution	
Particulars	Time
Greeting with students	05 Minutes
Previous Class Review	05 Minutes
Present Class Topic Discussion and Lecture Delivery	30 Minutes
Present Class Topics Review	05 Minutes

AIMS

1. Describe the features of multi-storied building
2. Explain plan, section, elevation of framed structure multi-storied building with footing, Column, Grade beam, Floor beam and Slab.
3. State the plan, elevation and cross section of the raft and pile foundation.
4. Explain RCC cantilever retaining wall.
5. Explain working drawing of beam, sun shed and slab
6. State the plan and sectional elevation of a half turn staircase, ramp and lift core.
7. Describe 3d modeling and rendering using auto cad, Max and Maya.
8. Prepare a plan, layout plan, section and elevation for multi-story framed structure building using CAD.
9. Prepare a plumbing layout plan for a toilet with required fixture

SHORT DESCRIPTION

Drawing is the language of engineers. Engineering is absolutely incomplete without thorough knowledge of drawing. Civil Diploma Engineer must be capable of sketching detailed construction drawings of various components of building for the purpose of communication with project related persons or Engineer. CAD is Computer-Aided Design software. It allows

users to create and edit 2D and 3D designs faster and more readily than hand. AutoCAD is a design tool which reduces human efforts compared to manual drafting. The data can also be saved and kept in the cloud, making it accessible from anywhere at any time. CAD is a software application that is used to create drafting solutions. CAD is available in mobile, cloud-based, and web-based versions. Civil diploma Students must create drawings appropriately in their Civil Engineering projects, outlining every fact of the same. As a result, Civil Engineering students can utilize this CAD program to create simple and effective drawing for their Civil Engineering projects.

Theory				
Lecture	Chapter	Supporting Equipment	Topic	Benefits
01	FEATURES OF MULTI-STORIED BUILDING	https://youtu.be/S4SFyQVyFtk?si=BvowGzpa y6ImLwhx projector, computer /Laptop, Reference Book	1.1 Define multi-storied building. 1.2 Mention the advantages and limitations of multi-storied building. 1.3 Describe the main features of a multi-storied building. 1.4 Explain Set Back Rules and Floor Area Ratio (FAR). 1.5 Describe the process of drawing a multi-storied building. 1.6 List multi-storied building drawing approval authorities.	1. To know about multi-storied building. 2. To know about the advantages and limitations of multi-storied building.
Quiz Test 01 at Lecture 02				
03	PLAN, SECTION, ELEVATION OF FRAMED STRUCTURE MULTI-STORIED BUILDING WITH SPREAD, COLUMN FOOTING FOUNDATION USING AUTO CAD	https://youtu.be/8m56n-SksuA?si=YoS55wVNYb0i8NUM projector, computer /Laptop, Reference Book	2.1 Define framed structure building. 2.2 Describe the drawing procedure of site plan and layout plan of a framed structure building. 2.3 Describe the main consideration to prepare ideal plan of a building. 2.4 Describe the drawing procedure of floor plan, elevation and sectional elevation of a multi-storied framed structure building.	1. To know about framed structure building. 2. To know about the drawing procedure of floor plan, elevation and sectional elevation of a multi-storied framed structure building.

Theory

Lecture	Chapter	Supporting Equipment	Topic	Benefits
04	PLAN, SECTION, ELEVATION OF FRAMED STRUCTURE MULTI-STORIED BUILDING WITH SPREAD, COLUMN FOOTING FOUNDATION USING AUTO CAD	https://youtu.be/gJZV89CY_sU?si=0yebenLDAvDsv4zZ projector, computer /Laptop, Reference Book	2.5 Describe the setting procedure of door and window in a floor plan of building. 2.6 Describe the drawing procedure of plumbing layout plan of a building showing different fittings and fixture. 2.7 Describe the drawing procedure of Electrical layout plan of a building showing different point and earthing. 2.8 Describe the drawing procedure of square and rectangular column and footing with showing reinforcement. 2.9 Describe the drawing process of spread footing foundation.	1. To know about the setting procedure of door and window in a floor plan of building. 2. To know about the drawing procedure of plumbing layout plan of a building showing different fittings and fixture.
Quiz Test 02 at Lecture 05				
06	PLAN, ELEVATION AND CROSS SECTION OF RAFT, PILE FOUNDATION AND RCC CANTILEVER RETAINING WALL	https://youtu.be/CCKznoKjfSM?si=E-36WW7wvYtX9zVh projector, computer /Laptop, Reference Book	3.1 Describe different types of foundation. 3.2 Describe the drawing process of isolated, combined, Mat and raft foundation with showing reinforcement. 3.3 State the drawing procedure of plan and sectional elevation of pre-cast pile with showing reinforcement. 3.4 State the drawing procedure of plan and sectional elevation of cast-in-situ pile with showing reinforcement.	"1. To know about the different types of foundation. 2. To know about the drawing process of isolated, combined, Mat and raft foundation with showing reinforcement.
07	PLAN, ELEVATION AND CROSS SECTION OF RAFT, PILE FOUNDATION AND RCC CANTILEVER RETAINING WALL	https://youtu.be/CCKznoKjfSM?si=E-36WW7wvYtX9zVh projector, computer /Laptop, Reference Book	3.5 Describe the drawing procedure of plan and sectional elevation of pile cap with showing reinforcement. 3.6 Describe the drawing procedure of detail elevation of R.C. C. retaining wall showing curtailment of reinforcement. 3.7 State the cross-sectional drawing procedure of R.C.C. counter-fort retaining wall. 3.8 Mention the drawing process of a R.C.C. counter fort retaining wall with showing reinforcement.	"1. To know about the drawing procedure of plan and sectional elevation of pile cap with showing reinforcement. 2. To know about the drawing procedure of detail elevation of R.C. C. retaining wall showing curtailment of reinforcement.
Class Test 01 at Lecture 08				

Theory

Lecture	Chapter	Supporting Equipment	Topic	Benefits
09	WORKING DRAWING OF BEAM, SUNSHED AND SLAB	https://youtu.be/nGJqMsQQSKg?si=RNm8InG-Cq8iZVcM projector, computer /Laptop, Reference Book	4.1 Describe the drawing procedure of R.C.C. fully continuous rectangular beam with showing reinforcement. 4.2 Describe the drawing procedure of column and beam joint with showing reinforcement. 4.3 State the procedure of detailed drawing of RCC lintel with sunshade showing reinforcement 4.4 Describe the drawing process of semi-continuous one- way slab with showing reinforcement.	1. To know about the drawing procedure of R.C.C. fully continuous rectangular beam with showing reinforcement. 2. To know about the drawing procedure of column and beam joint with showing reinforcement.
Class Test 02 at Lecture 10				
11	WORKING DRAWING OF BEAM, SUNSHED AND SLAB	https://youtu.be/Rlrv5VBoSdQ?si=UiUrGa4szm0iUNCm projector, computer /Laptop, Reference Book	4.5 Describe the drawing process of fully continuous one- way slab with showing reinforcement. 4.6 Describe the drawing process of semi-continuous two- way slab with showing reinforcement. 4.7 State the drawing procedure of fully continuous two-way slab with showing reinforcement.	1. To know about the drawing process of fully continuous one-way slab with showing reinforcement. 2. To know about the drawing process of semi-continuous two-way slab with showing reinforcement.
Mid Term Exam				
12	PLAN AND SECTIONAL ELEVATION OF A HALF TURN STAIRCASE, RAMP AND LIFT CORE	https://youtu.be/gghSSiVPors?si=RiNt2LrZIX8zRH0D projector, computer /Laptop, Reference Book	5.1 Define stair and staircase. 5.2 Define ramp. 5.3 Mention the required slope of ramp for special abled person. 5.4 State the condition to easy excess for special abled person in a staircase. 5.5 Describe the drawing process of half turn staircase. 5.6 Describe the drawing process of sectional elevation of a half turn staircase. 5.7 Describe the drawing process of drawing of a half turn staircase with showing reinforcement. 5.8 State the drawing procedure of ramp with showing reinforcement. 5.9 State the drawing procedure of plan and section of lift core with showing the reinforcement.	"1. To know about the stair and staircase. 2. To know about the ramp.

Theory

Lecture	Chapter	Supporting Equipment	Topic	Benefits
Quiz Test 03 & Class Test 03 at Lecture 13				
14	3D MODELING AND RENDARING USING AUTO CAD.	https://youtu.be/-rQvEPYbTkM?si=MIXSVXAJq71m4xkF projector, computer /Laptop, Reference Book	6.1 Explain starting 3D. 6.2 Explain the procedure to create 3D model. 6.3 Explain the creating procedure of surface modeling and rendering. 6.4 Explain the uses of 3D editing commands. 6.5 Explain creating procedure of perspective view. 6.6 Describe the uses of distance and camera in perspective view. 6.7 Describe the rendering and materials effect in 3D. 6.8 Describe the uses & set up of background in 3D. 6.9 Describe the lighting & shadow in 3D. 6.10 Describe the uses of showing images in 3D.	"1. To know about the procedure to create 3D model. 2. To know about the uses of 3D editing commands.
Quiz Test 04 & Class Test 043 at Lecture 15				

Practical

Lecture	Chapter	Supporting Equipment	Topic	Benefits
01	PREPARE A PLAN, LAYOUT PLAN, SECTION AND ELEVATION FOR MULTI-STORIED FRAMED STRUCTURE BUILDING USING CAD	https://youtu.be/S4SFyQVyFtk?si=BvowGzpa y6ImLwhx projector, computer /Laptop, Reference Book	1.1 Draw a line diagram of a multistoried building with verandah, kitchen and toilet. 1.2 Draw Typical floor plan with verandah	1. To know about how to draw a line diagram of a multistoried building with verandah, kitchen and toilet. 2. To know about how to draw Typical floor plan with verandah

Practical

Lecture	Chapter	Supporting Equipment	Topic	Benefits
02	PREPARE A PLAN, LAYOUT PLAN, SECTION AND ELEVATION FOR MULTI-STORIED FRAMED STRUCTURE BUILDING USING CAD	https://youtu.be/S4SFyQVyFtk?si=BvowGzpa y6ImLwhx projector, computer /Laptop, Reference Book	1.3 Draw front and side elevation of a three storied building 1.4 Draw the cross section of building. 1.5 Set dimensions, heading and title block in proper places on one sheet according to given data.	1. To know about how to Draw front and side elevation of a three storied building
03	PREPARE A PLAN, LAYOUT PLAN, SECTION AND ELEVATION FOR MULTI-STORIED FRAMED STRUCTURE BUILDING USING CAD	https://youtu.be/S4SFyQVyFtk?si=BvowGzpa y6ImLwhx projector, computer /Laptop, Reference Book	1.6 Draw the isometric view of a building showing front and one side elevation. 1.7 Perform the presentation. 1.8 Maintain the record of performed job.	1. To know about how to Draw the isometric view of a building showing front and one side elevation.
04	"PLAN, SECTION, ELEVATION OF FRAMED STRUCTURE MULTI-STORIED BUILDING WITH SPREAD, COLUMN FOOTING FOUNDATION USING AUTO CAD"	https://youtu.be/8m56n-SksuA?si=YoS55wVNYb0i8NUM projector, computer /Laptop, Reference Book	2.1 Draw a toilet plan. 2.2 Set fittings and fixture as per scale	1. To know about how to draw a toilet plan. 2. To know about the drawing procedure of set fittings and fixture as per scale

Practical

Lecture	Chapter	Supporting Equipment	Topic	Benefits
05	"PLAN, SECTION, ELEVATION OF FRAMED STRUCTURE MULTI-STORIED BUILDING WITH SPREAD, COLUMN FOOTING FOUNDATION USING AUTO CAD"	https://youtu.be/8m56n-SksuA?si=YoS55wVNYb0i8NUm projector, computer /Laptop, Reference Book	2.3 Draw elevation and section with dimension 2.4 Draw pipe layout plan	1. To know about how to Draw pipe layout plan
06	"PLAN, SECTION, ELEVATION OF FRAMED STRUCTURE MULTI-STORIED BUILDING WITH SPREAD, COLUMN FOOTING FOUNDATION USING AUTO CAD"	https://youtu.be/8m56n-SksuA?si=YoS55wVNYb0i8NUm projector, computer /Laptop, Reference Book	2.5 Set dimensions, heading and title block in proper places on one sheet according to given data.	1. How to Set dimensions, heading and title block in proper places on one sheet according to given data.
07	"PLAN, SECTION, ELEVATION OF FRAMED STRUCTURE MULTI-STORIED BUILDING WITH SPREAD, COLUMN FOOTING FOUNDATION USING AUTO CAD"	https://youtu.be/8m56n-SksuA?si=YoS55wVNYb0i8NUm projector, computer /Laptop, Reference Book	2.6 Draw the isometric view of a toilet.	1. To know about how to Draw the isometric view of a toilet.

Practical

Lecture	Chapter	Supporting Equipment	Topic	Benefits
08	"PLAN, SECTION, ELEVATION OF FRAMED STRUCTURE MULTI-STORIED BUILDING WITH SPREAD, COLUMN FOOTING FOUNDATION USING AUTO CAD"	https://youtu.be/8m56n-SksuA?si=YoS55wVNYb0i8NUM projector, computer /Laptop, Reference Book	2.7 Perform the presentation. 2.8 Maintain the record of performed job.	1. To know about how to Perform the presentation.
09	PREPARE KITCHEN LAYOUT PLAN SHOWING SINK AND GUS BURNER	https://youtu.be/gJZV89CY_sU?si=0yebenLDAvDsv4zZ projector, computer /Laptop, Reference Book	3.1 Draw a kitchen plan. 3.2 Set fittings and fixture and kitchen accessories as per scale 3.3 Draw elevation and section with dimension	1. To know about how to Draw a kitchen plan. 2. To know about the drawing procedure of Set fittings and fixture and kitchen accessories as per scale
10	PREPARE KITCHEN LAYOUT PLAN SHOWING SINK AND GUS BURNER	https://youtu.be/gJZV89CY_sU?si=0yebenLDAvDsv4zZ projector, computer /Laptop, Reference Book	3.4 Draw pipe layout plan	1. To know about how to Draw a kitchen plan. 2. To know about the drawing procedure of Set fittings and fixture and kitchen accessories as per scale
11	PREPARE KITCHEN LAYOUT PLAN SHOWING SINK AND GUS BURNER	https://youtu.be/gJZV89CY_sU?si=0yebenLDAvDsv4zZ projector, computer /Laptop, Reference Book	3.5 Set dimensions, heading and title block in proper places on one sheet according to given data. 3.6 Draw the isometric view of a kitchen.	1. To know about how to Draw a kitchen plan. 2. To know about the drawing procedure of Set fittings and fixture and kitchen accessories as per scale

Practical

Lecture	Chapter	Supporting Equipment	Topic	Benefits
12	PREPARE KITCHEN LAYOUT PLAN SHOWING SINK AND GUS BURNER	https://youtu.be/gJZV89CY_sU?si=0yebenLDAvDsv4zZ projector, computer /Laptop, Reference Book	3.7 Perform the presentation. 3.8 Maintain the record of performed job.	1. To know about how to Draw a kitchen plan. 2. To know about the drawing procedure of Set fittings and fixture and kitchen accessories as per scale
13	PREPARE ELECTRICAL LAYOUY PLAN SHOWING LIGHT, FAN, POWER,	https://youtu.be/gJZV89CY_sU?si=0yebenLDAvDsv4zZ projector, computer /Laptop, Reference Book	4.1 Draw plan for a building with verandah, kitchen and toilet 4.2 Set light, Fan, power point and earthling	1. To know about how to Draw plan for a building with verandah, kitchen and toilet 2. To know about the drawing procedure of Set light, Fan, power point and earthling
14	PREPARE ELECTRICAL LAYOUY PLAN SHOWING LIGHT, FAN, POWER,	https://youtu.be/gJZV89CY_sU?si=0yebenLDAvDsv4zZ projector, computer /Laptop, Reference Book	4.3 Set switch, calling bell and two pin point in required location. 4.4 Set Sub distribution board location.	1. To know about how to Draw plan for a building with verandah, kitchen and toilet 2. To know about the drawing procedure of Set light, Fan, power point and earthling
15	PREPARE ELECTRICAL LAYOUY PLAN SHOWING LIGHT, FAN, POWER,	https://youtu.be/gJZV89CY_sU?si=0yebenLDAvDsv4zZ projector, computer /Laptop, Reference Book	4.5 Set symbol, dimensions, heading and title block in proper places on one sheet according to given data.	1. To know about how to Draw plan for a building with verandah, kitchen and toilet 2. To know about the drawing procedure of Set light, Fan, power point and earthling
16	PREPARE ELECTRICAL LAYOUY PLAN SHOWING LIGHT, FAN, POWER,	https://youtu.be/gJZV89CY_sU?si=0yebenLDAvDsv4zZ projector, computer /Laptop, Reference Book	4.6 Perform the presentation. 4.7 Maintain the record of performed job.	1. To know about how to Draw plan for a building with verandah, kitchen and toilet 2. To know about the drawing procedure of Set light, Fan, power point and earthling

Practical

Lecture	Chapter	Supporting Equipment	Topic	Benefits
17	DRAW RCC FOOTING	https://youtu.be/CCKznoKjfSM?si=E-36WW7wvYtX9zVh projector, computer /Laptop, Reference Book	5.1 Draw Isolated, combined and continuous R.C.C footing for load bearing wall with the given data (showing of offsets & position of DPC).	1. To know about how to draw Isolated, combined and continuous R.C.C footing for load bearing wall with the given data (showing of offsets & position of DPC).
18	DRAW RCC FOOTING	https://youtu.be/CCKznoKjfSM?si=E-36WW7wvYtX9zVh projector, computer /Laptop, Reference Book	5.2 Draw foundation layout plan	1. To know about how to draw Isolated, combined and continuous R.C.C footing for load bearing wall with the given data (showing of offsets & position of DPC).
19	DRAW RCC FOOTING	https://youtu.be/CCKznoKjfSM?si=E-36WW7wvYtX9zVh projector, computer /Laptop, Reference Book	5.3 Draw RCC Column footing with Grade beam showing reinforcement	1. To know about how to draw Isolated, combined and continuous R.C.C footing for load bearing wall with the given data (showing of offsets & position of DPC).
20	DRAW RCC FOOTING	https://youtu.be/CCKznoKjfSM?si=E-36WW7wvYtX9zVh projector, computer /Laptop, Reference Book	5.4 Set symbol, dimensions, heading and title block in proper places on one sheet according to given data.	1. To know about how to draw Isolated, combined and continuous R.C.C footing for load bearing wall with the given data (showing of offsets & position of DPC).
21	DRAW RCC FOOTING	https://youtu.be/CCKznoKjfSM?si=E-36WW7wvYtX9zVh projector, computer	5.5 Perform the presentation. 5.6 Maintain the record of performed job.	1. To know about how to draw Isolated, combined and continuous R.C.C footing for load bearing wall with the given data (showing of offsets & position of DPC).

Practical

Lecture	Chapter	Supporting Equipment	Topic	Benefits
		/Laptop, Reference Book		of DPC).
22	CREATE RAFT AND MAT FOUNDATIO N	https://youtu.be/CCKznoKjfSM?si=E-36WW7wvYtX9zVh projector, computer /Laptop, Reference Book	6.1 Draw Raft and Mat foundation with column layout 6.2 Draw Sectional elevation showing reinforcement	1. To know about drawing procedure of Raft and Mat foundation with column layout
23	CREATE RAFT AND MAT FOUNDATIO N	https://youtu.be/CCKznoKjfSM?si=E-36WW7wvYtX9zVh projector, computer /Laptop, Reference Book	6.3 Draw RCC Column footing with raft foundation 6.4 Set symbol, dimensions, heading and title block in proper places on one sheet according to given data.	1. To know about drawing procedure of Raft and Mat foundation with column layout
24	CREATE RAFT AND MAT FOUNDATIO N	https://youtu.be/CCKznoKjfSM?si=E-36WW7wvYtX9zVh projector, computer /Laptop, Reference Book	6.5 Perform the presentation. 6.6 Maintain the record of performed job.	1. To know about drawing procedure of Raft and Mat foundation with column layout
25	PREPARE PILE AND PILE CAP	https://youtu.be/CCKznoKjfSM?si=E-36WW7wvYtX9zVh projector, computer /Laptop, Reference Book	7.1 Draw RCC cast-in-situ pile with reinforcement. 7.2 Draw RCC precast pile with reinforcement	1. To know about how to Draw RCC cast-in-situ pile with reinforcement.

Practical

Lecture	Chapter	Supporting Equipment	Topic	Benefits
26	PREPARE PILE AND PILE CAP	https://youtu.be/CCKznoKjfSM?si=E-36WW7wvYtX9zVh projector, computer /Laptop, Reference Book	7.3 Draw sections of a square pre-cast RCC pile.	1. To know about how to Draw RCC cast-in-situ pile with reinforcement.
27	PREPARE PILE AND PILE CAP	https://youtu.be/CCKznoKjfSM?si=E-36WW7wvYtX9zVh projector, computer /Laptop, Reference Book	7.4 Draw the cross-section of a pile cap over a group of piles. 7.5 Draw the shoe of a pile.	1. To know about how to Draw RCC cast-in-situ pile with reinforcement.
28	PREPARE PILE AND PILE CAP	https://youtu.be/CCKznoKjfSM?si=E-36WW7wvYtX9zVh projector, computer /Laptop, Reference Book	7.6 Perform the presentation. 7.7 Maintain the record of performed job.	1. To know about how to Draw RCC cast-in-situ pile with reinforcement.
29	DRAW CONTINUOUS RECTANGULAR BEAM AND T-BEAM WITH REINFORCEMENT	https://youtu.be/nGJqMsQQSKg?si=RNm8InG-Cq8iZVcM projector, computer /Laptop, Reference Book	8.1 Draw RCC Beam layout plan 8.2 Draw long and cross section of R.C.C T-Beam with reinforcement	1. To know about how to draw RCC Beam layout plan
30	DRAW CONTINUOUS RECTANGULAR BEAM AND T-BEAM WITH REINFORCEMENT	https://youtu.be/nGJqMsQQSKg?si=RNm8InG-Cq8iZVcM projector, computer /Laptop, Reference Book	8.3 Set symbol, dimensions, heading and title block in proper places on one sheet according to given data. 8.4 Perform the presentation. 8.5 Maintain the record of performed job.	1. To know about how to draw RCC Beam layout plan

