

Subject Code	Subject Name	Period per Week		Credit
26171	ARCHITECTURAL PROJECT	T	P	C
		1	6	3

Rationale	Diploma in Engineering Level students are required to acquire knowledge and skills on the area of Project Work is intended to provide opportunity for students to develop understanding of the interrelationship between different courses learnt in the entire diploma programme. To apply the knowledge gained in a way that enables them to develop & demonstrate higher order skills. The basic objective of this subject would be to ignite the potential of students' creative ability by enabling them to develop something which has social relevance, aging, it should provide a taste of real-life problem that a diploma-holder may encounter as a professional. Architectural project is a subject where these fields will help the students for effective performance of their duties in the relevant fields and it has been given more emphasis on practical aspect rather than theory in teaching learning approach.
Learning Outcome (Theoretical)	After Completing the subject, students will be able to: 1. Analyze Architectural site 2. Explain Building construction rules in Bangladesh 3. Interpret Building approval sheet and document 4. Illustrate Finished schedule 5. Prepare project presentation
Learning Outcome (Practical)	After undergoing the subject, students will be able to: 1. Conduct site visit 2. Prepare preliminary sketch of the project 3. Prepare presentation drawing of the project. 4. Prepare approval sheet of the project. 5. Prepare working drawings of the project 6. Prepare detail drawings of bathroom. 7. Prepare detail drawings of kitchen. 8. Prepare detail drawings of stair. 9. Prepare finished schedule of the project 10. Prepare detail drawings of the utility services. 11. Prepare sub- structural drawings of the project 12. Prepare super- structural drawings of the project. 13. Prepare electrical drawings of the project. 14. Prepare model of the project. 15. Perform presentation of the Project.

Detailed Syllabus (Theory)

UNIT	TOPICS WITH CONTENTS	CLASS (1 PERIOD)	FINAL MARKS
1	ARCHITECTURAL SITE ANALYSIS 1.1 State Architectural site analysis. 1.2 List necessary information for site analysis. 1.3 Describe Architectural site analysis checklist. 1.4 State Architectural site plan. 1.5 List the elements of site plan. 1.6 State read soil report of the site. 1.7 Describe sun path diagram, prevailing wind, climate condition for consideration to building design on the site.	3	7
2	BUILDING CONSTRUCTION RULES IN BANGLADESH 2.1 State Building construction rules-2008 in Bangladesh. 2.2 List valuable rules and regulations of building construction rules-2008 in Bangladesh. 2.3 State necessity of building construction rules in Bangladesh.	3	6
3	BUILDING APPROVAL SHEET AND DOCUMENT 3.1 State building approval documents and sheet. 3.2 State RAJUK sheet. 3.3 Discuss set back rules. 3.4 Describe FAR calculation. 3.5 List drawing for the building approval sheet. 3.6 Mention necessary papers/documents for the building approval sheet. 3.7 Discuss the necessary forms for building approval sheet.	4	7
4	FINISHED SCHEDULE 4.1 State finished schedule. 4.2 Discuss importance of finished schedules. 4.3 State the critical path method (CPM). 4.4 State PERT. 4.5 Discuss importance of CPM in project management.	3	5
5	PREPARE PROJEECT PRESENTATION 5.1Discuss drawing sheet presentation. 5.2 Describe necessity of multimedia/digital presentation. 5.3 Explain advantage and disadvantage of animation presentation. 5.4 State model preparation. 5.5 Explain questioners of the project.	3	5
	TOTAL	16	30

Detailed Syllabus (Practical)

SL.	Experiment Name with Procedure	Class (3 Period)	Continuous Marks
1	CONDUCT SITE VISIT 1.1 Visit a site and collect necessary measurements and information's. 1.2 Prepare a sketch plan of the existing site. 1.3 Prepare existing site plan in 1:200 (1/16"=1'-0") scale. 1.4 Take necessary pictures and information's of the site. 1.5 Perform SWOT analysis for the given project. 1.6 Make a presentation based on observation.	2	2
2	PREPARE PRELIMINARY SKTECH OF THE PROJECT 2.1 Draw the site in 1:100 (1/8" =1'-0") scale. 2.2 Draw bubble diagram of the project. 2.3 Sketch line diagram of the ground floor maintaining building-by-laws for approval of client. 2.4 Sketch line diagram of the 1st/typical floor maintaining building-by-laws. 2.5 Sketch the elevation/ free hand perspective view of the project. 2.6 Maintain the record of performed task.	3	3
3	PREPARE PRESENTATION DRAWING OF THE PROJECT. 3.1 Draw the site plan in 1:400 or 1:200 scale (1/32" =1'-0 or 1/16" =1'-0). 3.2 Draw the floor plans with furniture arrangement and rendering, scale 1:100 (1/8" =1'-0"). 3.3 Draw the front elevation with rendering, scale 1:100 (1/8" =1'-0"). 3.4 Make a mass model of the project building, scale 1:100 (1/8" =1'-0"). 3.5 Make a brochure with above topics (4:1 to 4:5) for approval of the client/owner. 3.6 Maintain the record of performed task.	3	4
4	PREPARE APPROVAL SHEET OF THE PROJECT. 4.1 Draw the approval sheet for any local authority like RAJUK, CDA, KDA, RDA, SDA, Pourashava and City corporation. 4.2 Fill up the necessary forms for approval of the local authority. 4.3 Maintain the record of performed task.	2	3
5	PREPARE WORKING DRAWINGS OF THE PROJECT. 5.1 Draw ground floor plan with detail dimensions in 1:50 (1/4" =1'-0") scale. 5.2 Draw 1st/typical floor plan with detail dimensions, scale 1:50 (1/4" =1'-0"). 5.3 Draw the roof plan showing rain water drainage system with detail dimensions in 1:50 (1/4" =1'-0") scale. 5.4 Draw elevations of the building showing materials, scale 1:50 (1/4" =1'-0"). 5.5 Draw the long section of the building through staircase with detail dimensions, scale 1:50 (1/4" =1'-0"). 5.5 Draw the cross section of the building with detail dimensions, scale 1:50 (1/4" =1'-0"). 5.6 Draw necessary part sections (through verandah, sunshade etc.) with		4

	detail dimensions, scale 1:50 ($\frac{1}{4}'' = 1'-0''$). 5.8 Maintain the record of performed task.		
6	PREPARE DETAIL DRAWINGS OF THE BATHROOM. 6.1 Draw toilet details of the project showing different fixtures used in toilet with detail dimensions in 1:25 ($\frac{1}{2}'' = 1'-0''$) scale. 6.2 Draw the necessary sections showing maximum fixtures, cabinet (if any) with detail dimensions in 1:25 ($\frac{1}{2}'' = 1'-0''$) scale. 6.3 Prepare a finishing schedule of the toilet. 6.4 Maintain the record of performed task.	2	3
7	PREPARE DETAIL DRAWINGS OF THE KITCHEN. 7.1 Draw kitchen detail plan of the project showing different fixtures/areas used in kitchen with detail dimensions in 1:25 ($\frac{1}{2}'' = 1'-0''$) scale. 7.2 Draw the necessary sectional elevation showing maximum fixtures, cabinet and overhead cabinet with detail dimensions in scale 1:25 ($\frac{1}{2}'' = 1'-0''$) 7.3 Maintain the record of performed task.	2	3
8	PREPARE DETAIL DRAWINGS OF THE STAIR. 8.1 Draw the detail plan of the stair with detail dimensions in 1:25 ($\frac{1}{2}'' = 1'-0''$) scale. 8.2 Draw the detail sections with detail dimensions in 1:25 ($\frac{1}{2}'' = 1'-0''$) scale. 8.3 Draw the section of the steps with nosing in 1:10 ($1'' = 1'-0''$) scale. 8.4 Draw the railing section and hand rail in 1:10 ($1'' = 1'-0''$) scale. 8.5 Draw the fixing arrangement of baluster in 1:10 ($1'' = 1'-0''$) scale 8.6 Maintain the record of performed task.	2	3
9	PREPARE FINISHED SCHEDULE OF THE PROJECT. 9.1 Prepare door schedule of the project. 9.2 Prepare window schedule of the project. 9.3 Prepare floor schedule of the project. 9.4 Prepare ceiling schedule of the project. 9.5 Prepare wall finishing schedule of the project. 9.6 Prepare Sanitary ware and plumbing schedule of the project. 9.7 Maintain the record of performed task.	2	3
10	PREPARE DETAIL DRAWINGS OF THE UTILITY SERVICES. 10.1 Draw the site plan of the project in 1:100 ($\frac{1}{8}'' = 1'-0''$) scale. 10.2 Draw the rain water disposal system of the site. 10.3 Draw the plumbing and sanitary system of the project. 10.4 Draw the detail drawing of the Septic Tank (ST) and Soak Well (SW). 10.5 Draw detail drawings of underground water reservoir. 10.6 Draw detail drawings of overhead water reservoir. 10.7 Maintain the record of performed task.	2	3
11	PREPARE SUB- STRUCTURAL DRAWINGS OF THE PROJECT. 11.1 Draw the layout plan of the project. 11.2 Draw the foundation/footing/trench plan and section with detail dimensions. 11.3 Draw the reinforcement detail of column footing with dimensions and necessary information. 11.4 Draw the reinforcement detail of grade beams with dimensions and	2	3

	necessary information.		
12	PREPARE SUPER- STRUCTURAL DRAWINGS OF THE PROJECT. 12.1 Draw the reinforcement detail of floor slab and roof slab with dimensions and necessary information. 12.2 Draw the reinforcement detail of stair with dimensions and necessary information. 12.3 Draw the reinforcement detail of underground and overhead water reservoir with dimensions and necessary information. 12.4 Draw the reinforcement detail of sunshade, railing, drop wall, lintel with detail dimensions and necessary information. 12.5 Maintain the record of performed task.	2	3
13	PREPARE ELECTRICAL DRAWINGS OF THE PROJECT. 13.1 Draw the electrical fixture and conduit layout of different floors. 13.2 Make the chart with abbreviation and symbol of the electric layout. 13.3 Draw the necessary circuit diagrams. 13.4 Show the earthing and lightning arrester system of the project. 13.5 Maintain the record of performed task.	2	3
14	PREPARE MODEL OF THE PROJECT. 14.1 Prepare 2 side 3D exterior (using computer software) of the building. 14.2 Prepare interior 3D of the living room with dining. 14.3 Prepare interior 3D of the Bedroom. 14.4 Prepare interior 3D of the kitchen. 14.5 Prepare interior 3D of the bathroom. 14.6 Draw an interior perspective of the internal stair (for duplex). 14.7 Draw an interior perspective of the entrance/lobby/foyer. 14.8 Make a final detail model of the project in 1:100 ($\frac{1}{8}'' = 1'-0''$) or ($\frac{3}{16}'' = 1'-0''$) scale showing detail landscape and surroundings. 14.9 Maintain the record of performed task.	2	4
15	PROJECT PRESENTATION 15.1 Prepare drawing sheet for presentation. 15.2 Prepare multimedia/digital presentation. 15.3 Prepare an animation video for the project. 15.4 Make a model for presentation 15.5 Prepare a sample questioners for presentation.	2	3
16	PREPARE ESTIMATION OF THE PROJECT 16.1 Observe measurements and Dimensions of Drawing. 16.2 Calculate the Quantity of material. 16.3 Perform cost Estimation of Materials. 16.4 Determine Labor Costs and Additional Costs 16.5 Review the Estimation of a Project. 16.6 Submit final Estimate and Report. 16.7 Present the report. 16.8 Perform swot analysis.	2	3
	Total	32	50

Resources (Tools, equipment, Materials and Machineries):

SI	Item Name	Quantity
1.	Drawing sheet (Size A2, A3)	10 reams (500 Sheets per Reams)
2.	Cutting Matt size A ₂ (18''X 24'')	50
3.	PVC Sheet, size (4'x8') (thickness 1.5mm)	25
4.	Model paper size (24''x 32''), 260-300 GSM, Color (grey, light grey, brick red)	50
5.	Tracing paper (Size 60/65 gsm, 20meter long roll)	12 Nos
6.	Acrylic sheet, Size (4'x 8')	10pcs
7.	Wooden Pencil (2B) Garman quality	12 Dozens
8.	Color pencil	12 packets
9.	Eraser (soft)	4 Dozens
10.	Paper Tape (3/4'')	4 Dozens
11.	Drafting pen (0.1, 0.3, 0.5, 1.0)	20 set
12.	Triangular scale	48 Nos.
13.	Set square	48 Set.
14.	Drafting table/board with parallel bar	48 Nos
15.	Mechanical lid pencil (0.3mm,0.5mm,0.7mm)	48 nos
16.	Anti cutter (Zinc alloy +carbon tool steel, style 1: 100mm*15*8mm	50 nos
17.	Anti cutter blade 45 ° & 30°	50 nos
18.	Steel scale 24+ inches	50 nos
19.	Superglue	50 nos
20.	Alpha/UHU (Crystal clear adhesive)	50 nos
21.	Ika glue 250 gm	50 nos
22.	Desktop with high-speed Ram, Monitor, CPU, Keyboard, Mouse & Mouse Pad.	Each item per person
23.	Auto CAD software, Power point, Adobe Photoshop Illustrator software, Sketchup, 3D Max, V-ray.s	Each item 1 no's
24.	Color Printer A3 Size	1 no's
25.	Multimedia & high-speed internet connection	Each item for each computer
26.	Multimedia screen for display	1 no's
27.	Paper for printing (A3)	As required (ream)

Reference books:

Sl.	Book Name	Writer Name	Publisher Name & Edition
01	Architectural Drafting and Design	Donald E Hepler Paul L Wallach	
02	Time saver standard for building type	Joseph D Chira	
03	Time saver standard for site planning	Joseph D Chira	
04	New Metric Hand Book	Tutt/Adler	
05			

Website References:

Sl	Web Link	Remarks
01	https://www.firstinarchitecture.co.uk/site-analysis-site-visit/	
02	https://www.archisoup.com/architecture-site-analysis-site-visit	
03	https://arch-bangla.com/rajuk-approval-drawing/	
04	https://www.shellmark.net/rajuk-plan-approval-process-dhaka-bd	
05	https://rajuk.portal.gov.bd/sites/default/files/files/rajuk.portal.gov.bd/page/20b761b8_a b9c_4ec7_8692_0877fe834afd/DhakalmaratNirmanBidhimala-2008.pdf	
06	https://www.lifeofanarchitect.com/architectural-graphics-101-finish-schedules/	
07	https://www.archisoup.com/finish-schedules	
08	https://www.indeed.com/career-advice/career-development/how-to-present-project	
09	https://arch-bangla.com/	
10	https://www.scribd.com/document/604312211/DAP-2022-2035-Volume-I	