



**BANGLADESH TECHNICAL EDUCATION BOARD**  
**Agargaon, Sher-E-Bangla Nagar**  
**Dhaka-1207.**

**04-YEAR DIPLOMA IN ENGINEERING CURRICULUM**  
**COURSE STRUCTURE & SYLLABUS**  
**(PROBIDHAN-2022)**

**ARCHITECTURE TECHNOLOGY**  
**TECHNOLOGY CODE: 61**

**3<sup>rd</sup> SEMESTER**  
**(Effective from 2022-2023 Academic Sessions)**

**DIPLOMA IN ENGINEERING CURRICULUM**  
**COURSE STRUCTURE**  
**(PROBIDHAN-2022)**  
**TECHNOLOGY NAME: ARCHITECTURE TECHNOLOGY (61)**  
**(3<sup>RD</sup> SEMESTER)**

SL No.	Subject		Period per Week		Credit	Marks Distribution						
						Theory Assessment			Practical Assessment			Grand Total
	Code	Name	Theory	Practical		Continuous	Final	Total	Continuous	Final	Total	
1	25922	Physics-II	3	3	4	60	90	150	25	25	50	200
2	25931	Mathematics-III	3	3	4	60	90	150	25	25	50	200
3	26131	Architectural Design-II	3	3	4	60	90	150	25	25	50	200
4	26132	Architectural Graphics	2	3	3	40	60	100	25	25	50	150
5	26133	Working Drawing-I	1	3	2	20	30	50	25	25	50	100
6	26134	Climatology	2	-	2	40	60	100	-	-	-	100
7	26135	Computer Aided Drawing-I	-	6	2	-	-	-	50	50	100	100
Total			14	21	21	280	420	700	175	175	350	1050

Subject Code	Subject Name	Period/Week		Credit
		T	P	C
26131	Architectural Design-II	3	3	4

<b>Rationale</b>	<p>The subject will enable the diploma Architecture students to improve architectural design and drawing skill by enhancing his imagination and accumulation of knowledge. Concept and mind maps that are some of these methods guide students to think and explore. The student to establish an analysis–synthesis–evaluation relationship and improve his intellectual and visual perception abilities. Learners can be expressed of the relationships between a design product (in this case, an architecture), its purpose, the designer's (architect's) conceptualization and the contextual constraints on realizing the purpose. Skilled students can apply their knowledge and experience in Architectural different sector.</p>
<b>Learning Outcome (Theoretical)</b>	<p><b>After undergoing the subject, students will be able to</b></p> <ul style="list-style-type: none"> <li>▪ Describe the approach of architectural design.</li> <li>▪ Discuss the area planning for building design.</li> <li>▪ Discuss different type of house.</li> <li>▪ Explain planning procedure of a residential building.</li> <li>▪ List the basic area of residential building.</li> <li>▪ State different floor plan of residential building.</li> <li>▪ Explain furniture layout of a residential building.</li> <li>▪ Describe the planning of a kitchen.</li> <li>▪ Describe the Planning of a toilet/bathroom.</li> <li>▪ Define laundry &amp; utility room.</li> <li>▪ Explain elevation of a residential building.</li> <li>▪ Discuss the section of a residential building.</li> <li>▪ List the set of presentation drawing.</li> </ul>
<b>Learning Outcome (Practical)</b>	<p><b>After undergoing the subject, students will be able to</b></p> <ul style="list-style-type: none"> <li>▪ Perform area planning.</li> <li>▪ Perform different floor plan of residential building.</li> <li>▪ Develop furniture layout.</li> <li>▪ Prepare kitchen fixture layout.</li> <li>▪ Prepare toilet/bathroom fixture layout.</li> <li>▪ Prepare the elevation of residential building.</li> <li>▪ Prepare the section of residential building.</li> <li>▪ Prepare the presentation drawing set.</li> </ul>

## Detailed Syllabus(Theory)

Unit	Topics with Contents Class (3 Period)	Class (3 Period)	Final Marks
1	<b>APPROACH OF ARCHITECTURAL DESIGN</b> 1.1. Define Design and planning. 1.2. Mention design principles applied to architectural design concept. 1.3. Explain design in nature. 1.4. Explain general observation of architectural design & planning sequence. 1.5. Discuss planning consideration for residential building. 1.6. Describe the styles of house. 1.7. Explain the design process of a residential building.	2	5
2	<b>AREA PLANNING FOR BUILDING DESIGN</b> 2.1. Define building planning. 2.2. Discuss site selection of a building. 2.3. State the planning factors for site selection. 2.4. List the information of site surroundings. 2.5. Explain setback. 2.6. Explain RAJUK setback rules. 2.7. Discuss the measurement method of a site. 2.8. Explain FAR calculation. 2.9. List the requirements & desires of a client for building planning.	4	8
3	<b>DIFFERENT TYPE OF HOUSES</b> 3.1. Define house and housing 3.2. List the different type of house. 3.3. Discuss the characteristics of different type of house. 3.4. Discuss structural types of Single Storied houses, Double storied, multi storied, simplex, duplex, triplex, multiplex, Apartment/Flat detached, semi-detached, row house. 3.5. Define split-level house. 3.6. Discuss the characteristics of split-level house. 3.7. Discuss the planning consideration of split-level house. 3.8. Discuss Studio Apartment and its characteristics. 3.9. Discuss the planning consideration of Studio Apartment.	4	10
4	<b>BASIC AREAS OF RESIDENTIAL BUILDING</b> 4.1. Identify the basic area of residential building. 4.2. Identify different types of room and space. 4.3. Discuss Master Bed, Child Bed, Guest Bed and Servants/maid bed of sleeping area. 4.4. Discuss living, dining, TV, music, game, gymnasium, library, family living, prayer, sewing of living area. 4.5. Discuss kitchen, kitchen store, pantry, kitchenette, utility, laundry, sun room, box room, powder room, dressing, study, store, terrace, open terrace, veranda, balcony, stair case, elevator, garage, parking, toilet/bathroom, mud room, swimming pool of service area. 4.6. Discuss the standard sizes of different rooms. 4.7. Identify the location of entrance.	4	10
5	<b>PLANNING PROCEDURE OF A RESIDENTIAL BUILDING</b>	4	5

	5.1. Define open plan and closed plan. 5.2. Discuss quiet zone and noise zone of a house. 5.3. Explain the bubble diagram of a house. 5.4. Describe the traffic pattern. 5.5. Describe the preliminary and final sketching. 5.6. Explain ventilation and cross ventilation. 5.7. Discuss environmental factors affecting different rooms based on sun path, Wind flow. 5.8. Discuss building orientation. 5.9. Discuss single line drawing and double line drawing procedure from bubble diagram.		
6	<b>DIFFERENT FLOOR PLAN OF RESIDENTIAL BUILDING</b> 6.1. Identify different types of floor plan. 6.2. Differentiate between ground floor plan and typical floor plan. 6.3. Describe the design procedures of floor plan of a residential building. 6.4. List the requirements/annotations (room name, north sign, roads) to be used in floor plan. 6.5. Discuss scale used in floor plan.	3	5
7	<b>FURNITURE LAYOUT OF A RESIDENTIAL BUILDING</b> 7.1. List the typical furniture group units of residential building. 7.2. List the furniture of a living room. 7.3. Discuss the measurement, space allowance and clearance of furniture for living room. 7.4. List the furniture for a bed room. 7.5. Discuss the measurement, space allowance and clearance of furniture for bed room. 7.6. List the furniture of a dining room. 7.7. Discuss the measurement, space allowance and clearance of furniture of a dining room.	4	7
8	<b>PLANNING OF A KITCHEN</b> 8.1. State the planning factors of a kitchen. 8.2. Mention different areas of a Kitchen. 8.3. Define nook. 8.4. Explain the use of different fixtures in Kitchen. 8.5. Explain the use of different appliance in kitchen. 8.6. Discuss working triangle. 8.7. List the different types of kitchen. 8.8. Explain the different cabinet and platform in kitchen. 8.9. Discuss modular kitchen.	4	10
9	<b>PLANNING OF A TOILET/BATHROOM</b> 9.1. State toilet/bathroom, toilet/bathroom, latrine and public toilet/bathroom. 9.2. Discuss location of bath room. 9.3. Discuss the standard size of toilet/bathroom. 9.4. Discuss the function of different fixture and fittings used in toilet/bathroom	4	10

	9.5. Discuss the dimension of different fixture & fittings. 9.6. Discuss wet zone and dry zone of a toilet/bathroom.		
10	<b>LAUNDRY &amp; UTILITY ROOMS</b> 10.1. State planning factors of laundry and utility room. 10.2. Describe the function of laundry and utility room. 10.3. Explain the size of laundry and utility room. 10.4. State the planning factors of laundry and utility room. 10.5. Describe the function of store room. 10.6. Explain the location and size of store room.	<b>2</b>	<b>5</b>
11	<b>ELEVATION OF A RESIDENTIAL BUILDING</b> 11.1. State elevation. 11.2. Discuss the measurement of building components used in elevation. 11.3. Discuss the line grades used in elevation drawing (near and far). 11.4. Define the function of emphasis used in elevation. 11.5. Explain necessity of freehand sketches of trees, cars & human figure used in elevation. 11.6. Discuss necessity of rendering used in elevation. 11.7. List the materials used in elevation drawing.	<b>4</b>	<b>5</b>
12	<b>SECTION OF A RESIDENTIAL BUILDING.</b> 12.1. State section line in different floor plan. 12.2. State the requirements and information used in section. 12.3. Discuss the different dimensions of different building components used in section. 12.4. Discuss different symbols & textures used in section. 12.5. Describe necessity of working drawing, detail drawing and shop drawing. 12.6. Describe dimensioning and annotation used in section.	<b>6</b>	<b>5</b>
13	<b>SET OF PRESENTATION DRAWING</b> 13.1. Discuss the necessity of presentation drawing. 13.2. List the drawing to prepare a set of presentation drawing. 13.3. Discuss the sequence of drawing of presentation drawing. 13.4. Discuss the scale used for different presentation drawing. 13.5. Discuss printing process of a presentation drawing. 13.6. Discuss necessity of legends and cover page of a presentation drawing.	<b>3</b>	<b>5</b>
	<b>Total</b>	<b>48</b>	<b>90</b>

### Detailed Syllabus (Practical)

Sl.	Experiment name with procedure	Class (3 Period)	Continuous Marks
1	<b>PREPARE PLANNING OF RESIDENTIAL AREA.</b> 1.1. Draw a bubble diagram showing different areas of a house. 1.2. Show the relationship of three basic area. 1.3. Draw a traffic pattern.	<b>1</b>	<b>2</b>

	1.4. Draw single line diagram of a residential building. 1.5. Draw Double line diagram of a residential building. 1.6. Draw the winter and summer sun angle diagram and showing air movement of the room		
2	<b>PREPARE DIFFERENT FLOOR PLAN OF RESIDENTIAL BUILDING</b> 2.1. Draw setback for selected site with FAR & MGC calculation and information. 2.2. Draw Ground Floor Plan of a two-bedroom house with all information (Scale 1:100 or 1/8"=1'-0"). 2.3. Draw Typical Floor Plan of the two-bedroom house with all information (Scale 1:100 or 1/8"=1'-0"). 2.4. Draw Roof Plan of the two-bedroom house with all information (Scale 1:100 or 1/8"=1'-0").	2	4
3	<b>DEVELOP FURNITURE LAYOUT</b> 3.1. Draw living room furniture. 3.2. Prepare a living room furniture arrangement with space allowance and clearance. 3.3. Prepare a bedroom furniture arrangement with space allowance and clearance. 3.4. Prepare a dining room furniture arrangement with space allowance and clearance.	3	4
4	<b>PREPARE KITCHEN FIXTURE LAYOUT</b> 4.1. Draw different types of kitchen fixture, fittings and appliances. 4.2. Draw working triangle of different type of kitchen. 4.3. Draw different type of kitchen showing space allowance and clearance of fixture. 4.4. Draw an isometric view of a kitchen cabinet showing different dimension.	2	3
5	<b>PREPARE TOILET/BATHROOM FIXTURE LAYOUT</b> 5.1. Draw different types of toilet/bathroom fixture with dimension (Scale 1:25 or 1/2"=1'-0"). 5.2. Draw the plan of a toilet/bathroom showing two fixtures and fittings (Scale 1:25 or 1/2"=1'-0") 5.3. Draw the sectional elevation of a toilet/bathroom showing fixture and fittings with dimension (Scale 1:25 or 1/2"=1'-0")	2	3
6	<b>PREPARE THE ELEVATION OF RESIDENTIAL BUILDING</b> 6.1. Draw a front elevation of 4-stoired residential building (Scale 1:100 or 1/8"=1'-0") 6.2. Draw a back elevation of 4-stoired residential building (Scale 1:100 or 1/8"=1'-0"). 6.3. Draw a right elevation of 4-stoired residential building (Scale 1:100 or 1/8"=1'-0"). 6.4. Draw a left elevation of 4-stoired residential building. (Scale 1:100 or 1/8"=1'-0"). 6.5. Apply graphic symbol (human, tree, car) in the elevation. 6.6. Apply rendering in elevation.	2	3
7	<b>PREPARE THE SECTION OF RESIDENTIAL BUILDING</b> 7.1. Draw a longitudinal section of 4-stoired residential building. (Scale 1:100 or 1/8"=1'-0") 7.2. Draw a cross- section of 4-stoired residential building. (Scale 1:100 or 1/8"=1'-0")	2	4

	7.3. Apply symbols and textures in section.		
8	<b>PREPARE THE PRESENTATION DRAWING SET.</b> 8.1. Sketch a line plan of a multistoried two bed room residential building in a given area. 8.2. Draw the plan of the building in 1:100 or 1/8"=1'-0" scale. 8.3. Draw the 4-side elevations with rendering of the building in 1:100 or 1/8"=1'-0" scale. 8.4. Draw section of the building in 1:100 or 1/8"=1'-0" scale. 8.5. Draw roof plan of the building in 1:100 or 1/8"=1'-0" scale. 8.6. Draw the lay-out plan of the building in 1:200 or 1/16"=1'-0" scale.	2	2
	<b>Total</b>	<b>16</b>	<b>25</b>

### Necessary Resources (Tools, equipment's and Machinery):

Sl	Item Name	Quantity
1	Drawing sheet (Size A2, A3)	10 reams (500 Sheets per Reams)
2	Tracing paper (Size 60/65 gsm, 20meter long roll)	12 Nos
3	Wooden Pencil (HB, B, 2B, 4B, 6B, 8B)	16 Dozens
4	Colour pencil	12 Packet
5	Charcoal	4 Dozens
6	Eraser(soft)	4 Dozens
7	Paper tape(3/4")	20 Set
8	Drafting pen(0.1,0.2,0.3,0.4,0.5,1.0,1.2)	48 Nos
9	Triangular scale	48 Nos
10	Set square	48 Nos
11	Template(circle,ellipse,furniture)	48 Nos
12	Drafting table/board with parallel bar	48 Nos
13	Drawing sheet(sizeA2,A4)	10 reams(500 sheets per ream)
14	Mechanical lid pencil(0.5mm)	48 Nos



**Recommended Books:**

SI	Book Name	Writer Name	Publisher Name & Edition
01	Architecture Drafting and Design	Donald E. Hepler Paul I. Wallach	
02	Architectural drafting 1	Md Rafiqueel Islam	BTEB
03	Time saver standards for building types	Joseph de Chiara, John Han Cock Callender	
04	Time saver standards for interior design and space planning	joseph de Chiara Julius, Panero Martin Zelnik	
05	Architectural drafting 2	Md Manjurul Alam	BTEB
06	ARCHITECTURE Form, Space and Order	Francis D.K.Ching	
07	Basics Architectural Design	Bert Bielefeld	
08	The Language of Architecture	Andrea Simitich, Val Warke	
09	Rethinking Basic Design in Architectural Education	Mine Ozkar	
10	Basic Design Principals of Architecture	Parker, Leonard	
11	Design Drawing	Francis D.K. Ching	
12	Drafting & Design for Architecture & Construction	HEPLER, Dana j Wallach, Paul Ross, Donald	

**Website References:**

SI	Web Link	Remarks
01	<a href="https://www.roomsketcher.com/blog/furniture-layout/">https://www.roomsketcher.com/blog/furniture-layout/</a>	
02	<a href="https://www.pdfdrive.com/time-saver-standards-for-interior-design-planning-e158776948.html">https://www.pdfdrive.com/time-saver-standards-for-interior-design-planning-e158776948.html</a>	
03	<a href="https://www.pdfdrive.com/design-drawing-d189362125.html">https://www.pdfdrive.com/design-drawing-d189362125.html</a>	
04	<a href="https://pdfcoffee.com/how-to-develop-architectural-concepts-1pdf-pdf-free.html">https://pdfcoffee.com/how-to-develop-architectural-concepts-1pdf-pdf-free.html</a>	

