

Preface

The University started its operation in 1980 as College of Engineering at its temporary campus at Tejgaon, under the University of Dhaka and used to offer a four-year Bachelors degree in Civil Engineering, Electrical and Electronic Engineering, Mechanical Engineering to meet the growing need for advanced engineering education in Bangladesh. After a short span of time, College of Engineering was renamed as Dhaka Engineering College in 1981. Dhaka Engineering College shifted to its present campus at Gazipur City in 1983. Dhaka Engineering College was promoted to Bangladesh Institute of Technology (BIT), Dhaka as a degree granting Institute under the Government ordinance in 1986 to overcome various problems it had been facing since its inception. BIT, Dhaka was changed to a full-fledged University as “Dhaka University of Engineering & Technology (DUET), Gazipur” since 1st September 2003. The University administration is largely defined and determined by the University Act (Dhaka University of Engineering & Technology, Gazipur Act, 2003). DUET has ultimately turned into an Institution that can now boast its commitment to quality engineering education and already has earned a good reputation across the globe for the quality of its graduates. So far, it has produced around 6,424 graduates in different branches. The curricula of DUET address the needs of the present and the future through its Undergraduate and Postgraduate programs.

There are four Faculties namely Faculty of Civil Engineering, Faculty of Electrical and Electronic Engineering, Faculty of Mechanical Engineering and Faculty of Science. Faculty of Civil Engineering comprises the Department of Civil Engineering (CE) and Department of Architecture (Arch). Faculty of Electrical and Electronic Engineering comprises the Department of Electrical and Electronic Engineering (EEE) and Department of Computer Science and Engineering (CSE). Faculty of Mechanical Engineering comprises the Department of Mechanical Engineering (ME), Department of Textile Engineering (TE), Department of Industrial and Production Engineering (IPE), Department of Chemical and Food Engineering (FE) and Department of Materials and Metallurgical Engineering (MME). Faculty of Science comprises the Department of Chemistry (Chem), Department of Mathematics (Math), Department of Physics (Phy), and Department of Humanities and Social Sciences (HSS).

There are three institutes namely Institute of Water and Environmental Sciences (IWES), Institute of Information and Communication Technology (IICT), Institute of Energy Engineering (IEE) and a research center namely Center for Climate Change and Sustainability Research (3CSR).

Currently, Undergraduate Degrees (B Sc. Engg. and B Arch.) and Postgraduate Degrees (M Sc. Engg., M Engg. M Sc., M Phil. and Ph. D) are offered at the University.

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PART A

1. Title of the Academic Program

Bachelor of Architecture

2. Name of the University

Dhaka University of Engineering & Technology, Gazipur

3. Vision of the University

To be the center of excellence for quality education, research and innovation.

4. Mission of the University

- To provide a congenial environment for world-class education, research and innovation.
- To produce highly efficient technical professionals endowed with practical knowledge, skills and ethical values based on emerging demands.
- To promote multi-faceted academic collaboration across universities and industries for research and innovation.
- To contribute in national policy making for sustainable socio-economic and industrial development of the country.
- To provide consultancy in solving technical problems at national and international levels.

5. Name of the Faculty Offering the Program

Civil Engineering

6. Name of the Department Offering the Program

Department of Architecture

7. Vision of the Program

To produce responsible architects capable of harmonizing historical, socio-cultural, environmental, technological issues associated with the built-environment and society.

8. Mission of the Program

M1	To offer a need-based, diverse, interdisciplinary and rigorous curriculum through comprehensive learning environment.
M2	To engage students in research and professional development.
M3	To enable students with a diverse range of transferable skills to work in multidisciplinary teams both in the national and global context.
M4	To apply integrated design thinking to context-specific problems in and beyond the subject field in an ethical manner.

9. Objectives of the Program

The five- year Bachelor of Architecture program prepares students with an early interest in architecture to become professional practitioners. Being an undergraduate programme, it prepares students as professionals with substantive methods of design and inquiry, provides exposure to a variety of interests in this field and assisting students to discover their own directions for future development. The professional and personal developments, the graduates are expected to demonstrate a few years after the completion of their degrees are embedded in the objectives.

- Capable of transforming an idea to an architectural proposition by incorporating all skills developed from core to advance design.
- Learn architecture as a meaningful cultural contribution dedicated to the sustenance of the imagination and the necessity for material embodiment within a larger social and ethical context.
- Exhibit understanding of the alternative materials, processes, cutting edge tools and techniques that apply to architectural design and building construction.
- Exhibit professionalism, ethical behavior, effective interpersonal and communication skills, and ability to work in multidisciplinary team in all career endeavors.
- Able to identify individual learning needs and understand the personal responsibility required for further professional education.

10.Name of the Degree

Bachelor of Architecture

11.Description of the Program

The Department of Architecture, one of the newest departments at DUET, under the Faculty of Civil Engineering has been offering five years professional Bachelor of Architecture (B. Arch) degree since its inception from 2011. Among the Public Universities in Bangladesh, this department offers B. Arch degree merely to the students of 4 years polytechnique Diploma (14 years of schooling) background coming from the whole country.

The main focus of the Bachelor of Architecture program of DUET is to prepare students for professional practice in architecture and emphasizes sustainability, critical thinking, research, and technology. The degree requirements are intended to provide students with a rigorous training in and exposure to the creative and technical aspects of architecture, and immerse students in a focused education that will build their skills to be top leaders and innovators in the field of architecture.

The Bachelor of Architecture curriculum of DUET is designed to provide the student with a comprehensive educational experience, gaining knowledge and skills in preparation for the successful and ethical practice of architecture. Design studios and courses build cumulatively over the five years in order to establish a broad and deep foundation of knowledge in architecture and built environment in relation to developments in the sciences, arts, and technology. The curriculum stresses the importance of architecture as a humanistic discipline concerned with the design and construction of habitats in diverse social and ecological conditions, and their corresponding requirements for sustainability and ethical responsibility.

The traditional and essential skills of drawing, model-making and design development are complemented by a full investigation of the analytical and critical uses of digital technologies. The study of world architecture is deepened by the understanding of individual cultures, environmental, and technological issues at every scale. The theory of the discipline, past and present, is investigated through the close analysis of critical texts and related to the

theory and practice of other art forms. The program offers a unique opportunity for interaction and interdisciplinary research and experience.

The department has developed its curriculum in ways that have reinforced its strong traditions of design and craft while investigating problems that reflect the changing conditions of contemporary practice, the urgent issues resulting from rapid urbanization and the need for environmental and cultural conservation. In these studio experiments students and faculty together explore the potential contributions of architecture to our changing world, redoubling their efforts to imagine a positive future for an architecture that is, after all, a discipline of design.

The five-year professional program is framed within the context of a rigorous liberal arts education that includes a wide range of core and elective courses in the Humanities and Social Sciences, emphasizing the nature of architecture as a cultural, social, and technological practice intimately tied to the increasingly urgent questions raised by the man-made and natural environment. The program aims to create socio-culturally and environmentally aware building professionals for this century who will bring order, vitality and beauty to the built environment. Today, congruent with 21st century's requirements and in harmony with modern branches of science has been programmed based on new paradigms and futuristic visions in order to prepare architects for confronting the societal, environmental and ethical aspects of their professional life and the challenges of modern technologies. Additionally, the course curriculum have been designed compatible to the existing and emerging needs of the industry. The autonomy of the University is a privilege to the department in terms of flexibility provided to add, modify and revise courses/syllabus at different time intervals to cater contemporary needs of the industrial concerns.

12. Graduate Attributes

On successful completion of the program, graduates will demonstrate the following attributes.

GA01	Deep discipline knowledge and intellectual breadth: ability to generate design proposals using understanding of a body of knowledge, some at the current boundaries of professional practice and the academic discipline of architecture.
GA02	Creative thinking and problem solving: ability to evaluate evidence, arguments and assumptions in order to apply critical and creative judgments within a structured discourse relating to architectural culture, theory and design.
GA03	Digital and technical capabilities: understanding of the alternative materials, processes, cutting edge tools and techniques that apply to architectural design and building construction.
GA04	Team work and communication skills: ability to apply a range of communication methods and media to present design proposals clearly and effectively to a range of audiences and contribute in a positive and collaborative manner to achieving common goals.
GA05	Intercultural and ethical competency: ability to act effectively as a global citizen whose personal values and practices are consistent with their roles as responsible members of society.
GA06	Professional and leadership qualities: ability to engage in professional behavior and have the potential to be entrepreneurial and take leadership roles in their

	chosen occupations or careers and communities.
GA07	Critical self- awareness and personal literacy: ability to identify individual learning needs and understand the personal responsibility required for further professional education.

13. Program Educational Objectives (PEOs)

The Undergraduate Program of the Department of Architecture is designed to prepare students for continued learning and successful careers in architectural consultancy, construction industry, government and academia. Our graduates are expected to:

PEO1	Demonstrate professional competencies in accordance with the scope of the global and local practice of architecture by applying the basic philosophy, fundamental principles and multidisciplinary aspects of architecture and technical skills.
PEO2	Expand their knowledge of current and emerging issues to meet evolving challenges facing society with a strong commitment to career-long professional development and lifelong learning.
PEO3	Analyse complex architectural problems and develop design solutions after considering safety, security, regulatory rules, sustainability, economic and social impacts of design decisions.
PEO4	Exhibit professionalism, ethical behavior, effective interpersonal and communication skills, and ability to work in multidisciplinary team in all career endeavors.
PEO5	Employ the thrust of architecture to the needs and demands of society and its integration into the social, economic, cultural and environmental aspects of nation building.

14. Program Outcome (POs)

The Bachelor of Architecture Program Outcomes (POs) are stated as:

PO1	Knowledge and Technical skills: Acquire knowledge of the history and theories of architecture and the related arts, engineering and technologies, natural and human sciences, mathematics and enhance technical skills to formulate comprehensive program and to apply in design process in architectural projects. (GA01)
PO2	Creative and imaginative skills: Identify, understand and categorize complex architectural problems and develop ability to provide creative, innovative and efficient solution for those. (GA02)
PO3	Architectural design thinking and design development skills: Generate unique ideas and transforming it to an architectural proposition by considering geographical and cultural context; user psychology and demand; social, economical and environmental factors; and state of the art building technologies. (GA01)
PO4	Analytical and scientific skills: Conduct survey, collect and categorize relevant information to assess prevailing condition and to determine possible options for interventions. (GA02)
PO5	Modern tool usage: Incorporate a wide range of technical skills of cutting-edge architectural software with design procedure which demonstrate a comprehensive application of life safety, accessibility, and sustainability issues in design decisions across varying scales and levels of complexity. (GA03)
PO6	The architect and Society: Understanding of the diverse needs, values, behavioural norms, physical abilities, social and spatial patterns that characterize different cultures and individuals; the responsibility of the architect to ensure equity of access to sites, buildings and their environment; and the need to relate buildings and spaces between them to human needs and scale. (GA05)
PO7	Culture, Ecology, Environment and Sustainability: Understand the cultural, ecological, environmental relationship with architectural design projects; its impact on the surrounding built environment within relevant precepts of sustainable design; climatic design, conservation and rehabilitation of architectural and cultural heritage. (GA05)
PO8	Values, ethics, moral and professionalism: Understand and perform professionally by utilizing knowledge of the diverse forms and the dimensions of professional practice along with associated ethical, legal, financial, social and humane responsibilities. (GA05)
PO9	Communication Skills: Communicate effectively both in verbal and written form using a wide range of representational media on complex architectural issues with professionals and society. (GA04)
PO10	Individual and team work: Competent to work effectively individually as well as a member or leader in diverse teams and multidisciplinary environments. (GA04)
PO11	Lifelong learning skills: Capable to understand the need for, and have the skills to involve in life- long learning and professional development in the broadest context of technological advancement. (GA06)
PO12	Managerial, entrepreneurship and leadership skills: Understand the basic principles of an architectural firm's business practices, project management principles, entrepreneurship and apply these in a team as a member or leader or in individual works in multidisciplinary environments. (GA07)

15. PEO to Mission Statement Mapping

Mapping of PEOs and Mission Statements is given below:

M/PEO	PEO1	PEO2	PEO3	PEO4	PEO5
M1	✓	✓	✓		
M2		✓	✓		
M3	✓	✓	✓	✓	
M4			✓	✓	✓

16. Mapping of POs to PEOs

Mapping of POs and PEOs is given below:

PEO/ PO	PEO1	PEO2	PEO3	PEO4	PEO5
PO1	✓	✓			
PO2	✓		✓		
PO3	✓		✓		
PO4	✓		✓		
PO5		✓			
PO6				✓	✓
PO7				✓	✓
PO8				✓	✓
PO9				✓	
PO10				✓	
PO11		✓			
PO12				✓	

17. Mapping courses with the POs

Courses	Program Learning Outcomes (POs)											
	(Cross marks indicate that the corresponding course fulfilled the particular PO)											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
1st year 1st semester												
ARCH 1112	✓	✓	✓						✓			
CE 1012	✓			✓								
CE 1014	✓			✓	✓							
CE 1011	✓		✓									
CE 1013	✓			✓	✓							
CE 1015	✓		✓	✓								
HSS 1811	✓			✓		✓						

1 st year 2 nd semester												
ARCH 1122	√	√	√						√	√		
ARCH 1222	√	√			√				√			
ARCH 1224	√	√							√	√		
ARCH 1521	√			√								
HSS 1621	√							√	√			
Math 1621	√			√								
Phy 1621	√			√								
2 nd year 1 st semester												
ARCH 2112		√	√	√			√		√			
ARCH 2212		√							√			
ARCH 2411	√			√			√					
ARCH 2511	√			√		√						
CE 2011	√			√								
CE 2111	√			√								
2 nd year 2 nd semester												
ARCH 2122		√	√	√		√	√		√			
ARCH 2421	√			√			√					
ARCH 2521	√			√		√						
ARCH 2621	√			√		√						
CE 2121	√			√								
3 rd year 1 st semester												
ARCH 3112		√	√	√			√		√			
ARCH 3312	√		√						√		√	
ARCH 3311	√			√			√					
ARCH 3511	√			√		√						
CE 3111	√			√								
HSS 3611	√			√				√				
3 rd year 2 nd semester												
ARCH 3122		√	√	√		√	√		√	√		
ARCH 3621	√			√		√	√					
CE 3121	√			√								
EEE 3121	√			√								
4 th year 1 st semester												
ARCH 4112		√	√	√	√	√	√		√	√		
ARCH 4511	√			√			√					
ARCH 4611	√			√			√					
CE 4111	√			√								
ME 4511	√			√								
4 th year 2 nd semester												
ARCH 4122		√	√	√		√	√	√	√	√		
ARCH 4222		√	√							√	√	√
5 th year 1 st semester												
ARCH 5112		√	√	√		√	√	√	√		√	
ARCH 5411	√			√			√					
CE 5111	√			√								
HSS 5611	√			√								√
5 th year 2 nd semester												
ARCH 5122		√	√	√		√	√		√		√	
ARCH 5721								√			√	√
HSS 5621	√			√		√						

Elective Theory Courses (Set-A)												
ARCH 1821	√			√								
ARCH 1823	√	√	√									
ARCH 2813	√	√		√		√	√					
ARCH 2815	√			√								
ARCH 2821	√						√					
ARCH 2823	√		√									
ARCH 3811	√		√				√					
ARCH 3813	√				√			√				
ARCH 3821	√					√	√					
HSS 3621	√					√						
Elective Theory Courses (Set-B)												
ARCH 4811	√					√	√					
ARCH 4813	√					√	√					
ARCH 5811	√	√		√								
ARCH 5813	√				√		√					
ARCH 5815	√	√	√	√								
ARCH 5821	√	√					√					
ARCH 5823	√			√		√	√					
Elective Sessional Courses (Set-A)												
ARCH 1822		√							√			
ARCH 1824	√	√			√				√			
ARCH 2812		√			√				√			
ARCH 2814	√	√										
ARCH 2822		√			√				√			
ARCH 2824		√			√				√			
ARCH 3812				√	√		√		√	√		
ARCH 3822			√						√		√	
ARCH 3824		√	√	√		√	√					
HSS 2612	√								√	√		
CE 3012				√	√				√	√		√
Elective Sessional Courses (Set-B)												
ARCH 4812				√		√			√	√		
ARCH 4814		√		√	√				√			
ARCH 4822			√	√	√				√			
ARCH 4824		√	√						√			
ARCH 4826		√	√		√	√	√		√			
ARCH 4828	√	√	√		√				√		√	
ARCH 5812	√	√	√	√					√			
ARCH 5814	√		√		√		√		√			
ARCH 5822			√	√	√				√		√	

PART B

18. Structure of the Curriculum

a) Duration of the program:

Years: 5, Semesters: 10

b) Admission Requirments:

A candidate for admission into the 1st year class must have passed the minimum 4 years Diploma in Engineering (Architecture technology or Architecture and Interior Design Technology) examination from Bangladesh Technical Education Board (after 10 years of schooling) or any examination recognized as equivalent there to and must also fulfill all other requirements as may be prescribed by the admission committee.

c) Total minimum credit requirement to complete the program:

182 Credits (Including 12.5 credits of exemption, See Appendix- 4 for details).

d) Total class weeks in a Year/ semester:

14 weeks/ Semester including 1 Week Mid Semester Break

e) Minimum GPA requirments for graduation: 2.20

f) Maximum academic years of completion: 08 years

g) Total Offered Courses: 86 Courses

h) Category of Courses:

Sl. No.	Type	Credits
i.	General Education Courses	16
ii.	Core Sessional	75
iii.	Core Theory	67
iv.	Elective Sessional	21
v.	Elective Theory	20
vi.	B. Arch Thesis/ Project	09

19. Semester wise distribution of Courses

19.1 Summary of Course Plan

Sl. No	Year/ Semester	Core				Elective				Total Credit Hour
		Theory		Sessional		Theory		Sessional		
		Credit Hour	Contact Hour	Credit Hour	Contact Hour	Credit Hour	Contact Hour	Credit Hour	Contact Hour	
1.	1st/1st*	8	8	9	18	-	-	-	-	17
2.	1st/2nd	10	10	7.5	15	2	2	1.5	3	21
3.	2nd/1st	8	8	6	12	2	2	3	6	19
4.	2nd/2nd	8	8	6	12	2	2	1.5	3	17.5
5.	3rd/1st	8	8	7.5	15	2	2	3	6	20.5
6.	3rd/2nd	6	6	6	12	4	4	1.5	3	17.5
7.	4th/1st	8	8	6	12	2	2	1.5	3	17.5
8.	4th/2nd	-	-	9	15	-	-	6	12	15
9.	5th/1st	6	6	9	18	4	4	1.5	3	20.5
10.	5th/2nd	4	4	9	18	2	2	1.5	3	16.5
Total		66	66	75	147	20	20	21	42	182

**All courses of 1st year 1st semester except ARCH 1112 are exempted for the students who have completed four years pre- graduation Diploma degree from a relevant Diploma program (having already completed equivalent courses of that semester).*

Relevant Diploma programs are:

- *Diploma in Engineering (Architecture technology)*
- *Diploma in Engineering (Architecture and Interior Design Technology)*

19.2 Distribution of Core Courses

19.2.1 Scheme of First Year- First Semester (1/1)

Course Type	SL No	Course Code	Course Title	Contact Hrs/week	Credit
Sessional	1	ARCH 1112	Design Studio I	9	4.5
	2	CE 1012	Cost Estimation	3	1.5
	3	CE 1014	Computer Aided Drawings	6	3
Theory	4	CE 1011	Construction Process	2	2
	5	CE 1013	Surveying	2	2
	6	CE 1015	Building Materials	2	2
	7	HSS 1811	Economics and Sociology	2	2
Semester Total				26	17
*All courses are exempted except ARCH 1112.					

19.2.2 Scheme of First Year- Second Semester (1/2)

Course Type	SL No	Course Code	Course Title	Contact Hrs/week	Credit
Core Sessional	1	ARCH 1122	Design Studio II	9	4.5
	2	ARCH 1222	Architectural Graphics I	3	1.5
	3	ARCH 1224	Computer Applications I	3	1.5
Core Theory	4	ARCH 1521	History of Architecture I	2	2
	5	HSS 1621	English Language	2	2
	6	Math 1621	Mathematics	3	3
	7	Phy 1621	Physics	3	3
Elective Sessional	8	Should be selected from Set-A Elective Sessionals		3	1.5
Elective Theory	9	Should be selected from Set-A Elective Theory		2	2
Semester Total				30	21

19.2.3 Scheme of Second Year- First Semester (2/1)

Course Type	SL No	Course Code	Course Title	Contact Hrs/week	Credit
Core Sessional	1	ARCH 2112	Design Studio III	9	4.5
	2	ARCH 2212	Architectural Graphics II	3	1.5
Core Theory	3	ARCH 2411	Climate and Design	2	2
	4	ARCH 2511	History of Architecture II	2	2
	5	CE 2011	Plumbing	2	2
	6	CE 2111	Structure I	2	2
Elective Sessional	7	Should be selected from Set-A Elective Sessionals		3	1.5
	8			3	1.5
Elective Theory	9	Should be selected from Set-A Elective Theory		2	2
Semester Total				28	19

19.2.4 Scheme of Second Year- Second Semester (2/2)

Course Type	SL No	Course Code	Course Title	Contact Hrs/week	Credit
Core Sessional	1	ARCH 2122	Design Studio IV	12	6
Core Theory	2	ARCH 2421	Architectural Acoustics and Lighting Design	2	2
	3	ARCH 2521	History of Architecture III	2	2
	4	ARCH 2621	Basic Physical Planning	2	2
	5	CE 2121	Structure II	2	2
Elective Sessional	6	Should be selected from Set-A Elective Sessionals		3	1.5
Elective Theory	7	Should be selected from Set-A Elective Theory		2	2
Semester Total				25	17.5

19.2.5 Scheme of Third Year- First Semester (3/1)

Course Type	SL No	Course Code	Course Title	Contact Hrs/week	Credit
Core Sessional	1	ARCH 3112	Design Studio V	12	6
	2	ARCH 3212	Working Drawing I	3	1.5
Core Theory	3	ARCH 3311	Ecology	2	2
	4	ARCH 3511	Modern and Contemporary Architecture	2	2
	5	CE 3111	Structure III	2	2
	6	HSS 3611	Logic and Philosophy	2	2
Elective Sessional	7	Should be selected from Set-A Elective Sessionals		3	1.5
	8			3	1.5
Elective Theory	9	Should be selected from Set-A Elective Theory		2	2
Semester Total				31	20.5

19.2.6 Scheme of Third Year- Second Semester (3/2)

Course Type	SL No	Course Code	Course Title	Contact Hrs/week	Credit
Core Sessional	1	ARCH 3122	Design Studio VI	12	6
Core Theory	2	ARCH 3621	Urban Design I	2	2
	3	CE 3121	Structure IV	2	2
	4	EEE 3121	Electrical Equipments	2	2
Elective Sessional	5	Should be selected from Set-A Elective Sessionals		3	1.5
Elective Theory	6	Should be selected from Set-A Elective Theory		2	2
	7			2	2
Semester Total				25	17.5

19.2.7 Scheme of Fourth Year- First Semester (4/1)

Course Type	SL No	Course Code	Course Title	Contact Hrs/week	Credit
Core Sessional	1	ARCH 4112	Design Studio VII	12	6
Core Theory	2	ARCH 4511	Architecture of Bengal	2	2
	3	ARCH 4611	Housing	2	2
	4	CE 4111	Structure V	2	2
	5	ME 4511	Mechanical Equipments	2	2
Elective Sessional	6	Should be selected from Set-B Elective Sessionals		3	1.5
Elective Theory	7	Should be selected from Set-B Elective Theory		2	2
Semester Total				25	17.5

19.2.8 Scheme of Fourth Year- Second Semester (4/2)

Course Type	SL No	Course Code	Course Title	Contact Hrs/week	Credit
Core Sessional	1	ARCH 4122	Design Studio VIII	15	7.5
	2	ARCH 4222	Professional Training*		1.5
Elective Sessional	3	Should be selected from Set-B Elective Sessionals		3	1.5
	4		3	1.5	
	5		3	1.5	
	6		3	1.5	
Semester Total				27	15

*Students will work under the direct supervision of an experienced, registered architect (full member of IAB) and also host of the firm or an office. The duration of the training will be 8 weeks (300 hrs). See details in Section 20.8.2.

19.2.9 Scheme of Fifth Year- Second Semester (5/1)

Course Type	SL No	Course Code	Course Title	Contact Hrs/week	Credit
Core Sessional	1	ARCH 5112	Design Studio IX	18	9
Core Theory	2	CE 5111	Structure VI	2	2
	3	ARCH 5411	Architectural Conservation	2	2
	4	HSS 5611	Project Management and Accounting	2	2
Elective Sessional	5	Should be selected from Set-B Elective Sessionals		3	1.5
Elective Theory	6	Should be selected from Set-B Elective Theory		2	2
	7			2	2
Semester Total				31	20.5

19.2.10 Scheme of Fifth Year- Second Semester (5/2)

Course Type	SL No	Course Code	Course Title	Contact Hrs/week	Credit
Core Sessional	1	ARCH 5122	Design Studio X	18	9
Core Theory	2	ARCH 5721	Professional Practice and Ethics	2	2
	3	HSS 5621	Bangladesh Studies and Government	2	2
Elective Sessionals	4	Should be selected from Set-B Elective Sessionals		3	1.5
Elective Theory	5	Should be selected from Set-B Elective Theory		2	2
Semester Total				27	16.5

19.3 Distribution of Elective Courses

19.3.1 Elective Theory Courses: Set- A

Required credit of elective courses from Set A is 12 (6 courses). Students of 1st, 2nd and 3rd year will be allowed to take these courses.

SL No	Course Code	Course Title	Contact Hrs/week	Credit
1	ARCH 1821	Advanced Building Materials and Technologies	2	2
2	ARCH 1823	Aesthetics and Design	2	2
3	ARCH 2813	Ergonomics	2	2
4	ARCH 2815	Art Appreciation	2	2
5	ARCH 2821	Energy Efficient Building Design	2	2
6	ARCH 2823	Interior Design	2	2
7	ARCH 3811	Educational Facilities Planning and Design	2	2
8	ARCH 3813	Fire Safety Design	2	2
9	ARCH 3821	Vernacular Architecture and Settlements	2	2
10	HSS 3621	Urban Economics and Urban Sociology	2	2

19.3.2 Elective Theory Courses: Set- B

Required credit of elective courses from Set B is 08 (4 courses). Students of 4th, 5th year will be allowed to take these courses.

SL No	Course Code	Course Title	Contact Hrs/week	Credit
1	ARCH 4811	Landscape Design	2	2
2	ARCH 4813	Urban Design II	2	2
3	ARCH 5811	Research Methodology	2	2
4	ARCH 5813	Industrial Building Planning and Design	2	2
5	ARCH 5815	Health Facilities Planning and Design	2	2
6	ARCH 5821	Commercial Building Planning and Design	2	2
7	ARCH 5823	Architectural Design for Disasters	2	2

19.3.3 Elective Sessional Courses: Set- A

Required credits of elective courses from Set A is 10.5 (7 courses). Students of 1st, 2nd and 3rd year will be allowed to take these courses.

SL No	Course Code	Course Title	Contact Hrs/week	Credit
1	ARCH 1822	Free Hand Drawing	3.0	1.5
2	ARCH 1824	Photography and Graphic Reproduction	3.0	1.5
3	ARCH 2812	Computer Applications II	3.0	1.5
4	ARCH 2814	Sculpture	3.0	1.5
5	ARCH 2822	Graphic Art	3.0	1.5
6	ARCH 2824	Computer Applications III	3.0	1.5
7	ARCH 3812	Climatology Lab	3.0	1.5
8	ARCH 3822	Working Drawing II	3.0	1.5
9	ARCH 3824	Product Design	3.0	1.5
10	HSS 2612	English Language Lab	3.0	1.5
11	CE 3012	Building Materials and Construction Workshop	3.0	1.5

19.3.4 Elective Sessional Courses: Set- B

Required credits of elective courses from Set B is 10.5 (7 courses). Students of 4th, 5th year will be allowed to take these courses.

SL No	Course Code	Course Title	Contact Hrs/week	Credit
1	ARCH 4812	Architectural Field Survey	3	1.5
2	ARCH 4814	Digital Fabrication	3	1.5
3	ARCH 4822	Climatic Design, Modeling and Simulation	3	1.5
4	ARCH 4824	Interior Design Studio	3	1.5
5	ARCH 4826	Landscape Design Studio	3	1.5
6	ARCH 4828	Building Information Modeling in Architectural Practice	3	1.5
7	ARCH 5812	Seminar	3	1.5
8	ARCH 5814	Visual Methods in Planning and Development	3	1.5
9	ARCH 5822	Dissertation	3	1.5

19.4. Course Distribution

Major Subject Areas and Categories:

a) General Education (GED) [16 Credits]

Sl. No	Course	Credit
1.	HSS 1621: English Language	2
2.	HSS 1811: Economics and Sociology	2
3.	HSS 3611: Logic and Philosophy	2
4.	Math 1621: Mathematics	3
5.	Phy 1621: Physics	3

6.	ARCH 3311: Ecology	2
7.	HSS 5621: Bangladesh Studies and Government	2
Total		16

b) History, Human Behavior and Environment (HHE) [16 Credits]

Sl. No	Course	Credit
1.	ARCH 1521: History of Architecture I	2
2.	ARCH 2511: History of Architecture II	2
3.	ARCH 2521: History of Architecture III	2
4.	ARCH 3511: Modern and Contemporary Architecture	2
5.	ARCH 4511: Architecture of Bengal	2
6.	ARCH 2621: Basic Physical Planning	2
7.	ARCH 3621: Urban Design I	2
8.	ARCH 4611: Housing	2
Total		16

c) Technical Systems [28 Credits]

Sl. No	Course	Credit
1.	CE 2111: Structure I	2
2.	CE 2121: Structure II	2
3.	CE 3111: Structure III	2
4.	CE 3121: Structure IV	2
5.	CE 4111: Structure V	2
6.	CE 5111: Structure VI	2
7.	CE 1015: Building Materials	2
8.	CE 1013: Surveying	2
9.	ARCH 2411: Climate and Design	2
10.	ARCH 2421: Architectural Acoustics and Lighting	2
11.	CE 2011: Plumbing	2
12.	EEE 3121: Electrical Equipments	2
13.	ME 4511: Mechanical Equipments	2
14.	ARCH 5411: Architectural Conservation	2
Total		28

d) Practice [7.5 Credits]

Sl. No	Course	Credit
1.	CE 1011: Construction Process	2
2.	CE 1012: Cost Estimation	1.5
3.	HSS 3621: Project Management and Accounting	2
4.	ARCH 5721: Professional Practice and Ethics	2
Total		7.5

e) Design and Design Communication Studies [72 Credits]

Sl. No	Course	Credit
1.	ARCH 1112: Design Studio I	4.5
2.	ARCH 1122: Design Studio II	4.5
3.	ARCH 2112: Design Studio III	4.5
4.	ARCH 2122: Design Studio IV	6
5.	ARCH 3112: Design Studio V	6
6.	ARCH 3122: Design Studio VI	6
7.	ARCH 4112: Design Studio VII	6
8.	ARCH 4122: Design Studio VIII	7.5
9.	ARCH 5112: Design Studio IX	9
10.	ARCH 5122: Design Studio X	9
11.	CE 1014: Computer Aided Drawings	3
12.	ARCH 1224: Computer Applications I	1.5
13.	ARCH 1222: Architectural Graphics I	1.5
14.	ARCH 2212: Architectural Graphics II	1.5
15.	ARCH 3212: Working Drawing I	1.5
Total		72

f) Electives [41 Credits]

Studio [21 Credits]		
Sl. No	Course	Credit
1.	ARCH 1822: Free Hand Drawing	1.5
2.	ARCH 1824: Photography and Graphic Reproduction	1.5
3.	ARCH 2812: Computer Applications II	1.5
4.	ARCH 2814: Sculpture	1.5
5.	ARCH 2822: Graphic Art	1.5
6.	ARCH 2826: Computer Applications III	1.5
7.	ARCH 3812: Climatology Lab	1.5
8.	ARCH 3822: Working Drawing II	1.5
9.	ARCH 3824: Product Design	1.5
10.	HSS 2612: English Language Lab	1.5
11.	CE 3012: Building Materials and Construction Workshop	1.5
12.	ARCH 4812: Architectural Field Survey	1.5
13.	ARCH 4814: Digital Fabrication	1.5
14.	ARCH 4822: Climatic Design, Modeling and Simulation	1.5
15.	ARCH 4824: Interior Design Studio	1.5
16.	ARCH 4826: Landscape Design Studio	1.5
17.	ARCH 4828: Building Information Modeling in Architectural Practice	1.5
18.	ARCH 5312: Seminar	1.5
19.	ARCH 5814: Visual Methods in Planning and Development	1.5
20.	ARCH 5822: Dissertation	1.5
Total Offered		28.5
Minimum credit to be earned		21

Taught/ Seminar [20 Credits]		
1.	ARCH 1821: Advanced Building Materials and Technologies	2
2.	ARCH 1823: Aesthetics and Design	2
3.	ARCH 2813: Ergonomics	2
4.	ARCH 2815: Art Appreciation	2
5.	ARCH 2821: Energy Efficient Building Design	2
6.	ARCH 2823: Interior Design	2
7.	ARCH 3811: Educational Facilities Planning and Design	2
8.	ARCH 3813: Fire Safety Design	2
9.	ARCH 3821: Vernacular Architecture and Settlements	2
10.	HSS 3621: Urban Economics and Urban Sociology	2
11.	ARCH 4811: Landscape Design	2
12.	ARCH 4813: Urban Design II	2
13.	ARCH 5811: Research Methodology	2
14.	ARCH 5813: Industrial Building Planning and Design	2
15.	ARCH 5815: Health Facilities Planning and Design	2
16.	ARCH 5821: Commercial Building Planning and Design	2
17.	ARCH 5823: Architectural Design for Disasters	2
Total Offered		34
Minimum credit to be earned		20

g) Internship [1.5 Credit]

Type	Course	Credit
Internship	ARCH 4822: Professional Training	1.5
Total		1.5

PART C

20. Description of Core Courses

20.1 1st Year 1st Semester

Note:

- (a) All courses of 1st year 1st semester, except ARCH 1112: Design Studio I, are exempted because of the candidates' completion of minimum 4 years pre-graduation Diploma in Architecture or Interior Technology backgrounds after 14 years of schooling. Moreover, admission test syllabus also included basic architectural subjects which usually covers in 4 years Diploma in Architecture and Interior Technology program.
- (b) Outcome-based curriculum is prepared for exempted courses. But attainment of the COs and POs are not documented due to exemption of 1st Year 1st Semester courses.

20.1.1 ARCH 1112

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 1112 COURSE TITLE: Design Studio I		
CREDIT: 4.5 (9hrs/week)	TERMS OFFERED: 1 st year 1 st semester	
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course Type: Core Sessional	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The aim of this course is to develop understanding basic principles and process of design. The course will enable students to compose with the basic elements on 2D surface following the architectural design principles.

Course Content: Study of human senses and their relationship to design; exercises in two-dimensional basic composition with points, straight and curved lines and pure geometric shapes by following the principles and process of design; observing nature to understand the principles of design.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Identify point, line, shapes and form in nature.	Classroom instruction, field survey and free hand sketch.	Class Assessments

CO2	Explore human senses, fundamental design principles (primary elements of design, proportion and scale, ordering principles), relationship of form and space and the process of design with an emphasize on two dimensions.	Classroom instruction, exploratory discussion, demonstration, free hand sketch.	Class Assessments
CO3	Create two dimensional architectural compositions with basic elements of architectural design by exploring nature, creative processes, and architectural design principles.	Classroom instruction, exploratory discussion, free hand sketch and model making.	Class Assessments and Final Presentation

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2		√	√						√			
CO3		√	√						√			

20.1.2 CE 1012

<p>DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: CE 1012 COURSE TITLE: Cost Estimation</p>	
CREDIT: 1.5 (6 hrs/week)	TERMS OFFERED: 1 st year 1 st semester
(Exempted Sessional)	

Rationale of Course: Cost Estimation course develops understanding about tender documents, rules, regulations and obligations of bidding. It also introduces the process of determining cost of construction, cost analysis of the various items of construction, preparation of schedules, control of cost with appropriate case studies.

Course Content: Basic understanding of tender documents, rules, regulations and obligations of bidding; process of determining cost of construction; cost analysis of the various items of construction; preparation of schedules; control of cost with appropriate case studies.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Understand the procedures of preparing tender documents and rules, regulations and ethical strategies for bidding.	Exempted	Admission test/Class and Examination conducted in Diploma in Engineering
CO2	Analyze the cost of construction of individual items and control of cost.		

CO3	Prepare detail schedule of construction and cost of a construction with detail step by step procedure.		
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Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2	√			√								
CO3				√								

20.1.3 CE 1014

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: CE 1014 COURSE TITLE: Computer Aided Drawings	
CREDIT: 3 (6 hrs/week)	TERMS OFFERED: 1 st year 1 st semester
(Exempted Sessional)	

Rationale of Course: This course develops knowledge, skill and attitude in the field of Computer Aided Drawings (CAD) with special emphasis on drawing environments and drawing aids, different setup of drawing in auto CAD, drawing commands, modification and edits of drawing, printing the drawing elements.

Course Content: Basic Understanding of drawing environments and drawing aids; different setup of drawing in Auto CAD; drawing commands; modification and edits of drawing; printing the drawing elements.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Identify the drawing environments, drawing aids, commands and printing techniques in Auto CAD.	Exempted	Admission test/Class and Examination conducted in Diploma in Engineering
CO2	Analyze the procedures and techniques of drawing and printing in Auto CAD.		
CO3	Prepare drawings using the drawing and printing commands in Auto CAD.		

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2	√			√	√							
CO3					√							

20.1.4 CE 1011

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: CE 1011 COURSE TITLE: Construction Process	
CREDIT: 3 (3 hrs/week)	TERMS OFFERED: 1 st year 1 st semester
(Exempted Theory)	

Rationale of Course: This course will develop knowledge, skill and attitude towards different types of structures, methods and techniques of construction with an emphasis on concrete, brick masonry, foundation, painting and varnishing, insulation floor, doors and windows.

Course Content: Types of structures and their methods and techniques of construction; Concrete; features and properties of concrete; concept and methods of curing concrete; strength, durability and weakness of concrete; types of concretes; brick masonry, its types and features; bond in brick masonry;

Foundation; aspects, features and classification of foundation; deep and shallow foundation; methods of casting and placing foundation; painting and vanishing; process of painting and varnishing; insulation in building; thermal and sound insulation; floor; types of floors and its components; materials for constructing floor; door and window; types, advantages and disadvantages of different types of doors and windows; scaffolding.

Mapping Course Learning Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Learning Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Describe the basic construction methods and common errors of structural components of a building and the process, techniques and materials used in different types of masonry, floor, doors & windows.	Exempted	Admission test/Class and Examination conducted in Diploma in Engineering
CO2	Apply relevant theory and practice of concrete construction and its quality control methods.		

Mapping of Course Learning Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√		√									
CO2	√											

20.1.5 CE 1013

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: CE 1013 COURSE TITLE: Surveying	
CREDIT: 2 (2 hrs/week)	TERMS OFFERED: 1 st year 1 st semester
(Exempted Theory)	

Rationale of Course: Surveying Method course introduces principles and techniques of engineering and physical surveys: chain, traverse and plane table survey, levels and levelling, contours and layout surveys.

Course Content: Engineering survey and physical survey; introduction to surveying-principles and techniques of physical surveys; chain survey and its principles; preparation of a chain survey map; compass surveying; cadastral surveying; traverse survey; plane table survey;

Bench mark and leveling; adjustment of leveling instrument; contouring; digital theodolite; layout surveys; plan and interpretations; surveying with total station; global positioning system (GPS); principles and operation of GPS receiver.

Mapping Course Learning Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Learning Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Describe principles and techniques of engineering survey, physical surveys, leveling and countouring.	Exempted	Admission test/Class and Examination conducted in Diploma in Engineering
CO2	Illustrate chain survey, traverse survey; plane table survey, cadastral survey, and survey with total station, leveling and contouring.		
CO3	Calculate angles and distances, differences in elevation area by using different modern survey equipments.		
CO4	Prepare drawings from surveyed documents.		

Mapping of Course Learning Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2	√											
CO3				√	√							
CO4				√	√							

20.1.6 CE 1015

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: CE 1015 COURSE TITLE: Building Materials	
CREDIT: 2 (2 hrs/week)	TERMS OFFERED: 1 st year 1 st semester
(Exempted Theory)	

Rationale of Course: Building Materials course introduces different building materials (cement, sand, concrete, stone, brick, timber, wood, tiles, glass etc) their classification, preparation, properties, manufacturing process, uses and application methods.

Course Content: Fundamentals of building materials; classification of different types of building materials; preparation, manufacture, properties, uses and application methods of different building materials e.g., cement, sand, concrete, stone, brick, timber, wood, tiles, glass etc.

Mapping Course Learning Outcomes (CLOs) with the Teaching-Learning and Assessment Strategy

Course Learning Outcomes (CLOs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Describe building materials, their classification, manufacturing process, uses, preparation and method of installation, modularity and qualities.	Exempted	Admission test/Class and Examination conducted in Diploma in Engineering
CO2	Assess the properties and characteristics of different materials through different mechanical tests and quality control tests.		
CO3	Recommend appropriate materials for different construction projects.		

Mapping of Course Learning Outcomes (CLOs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2				√								
CO3			√									

20.1.7 HSS 1811

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: HSS 1811 COURSE TITLE: Economics and Sociology	
CREDIT: 2 (2 hrs/week)	TERMS OFFERED: 1 st year 1 st semester
(Exempted Theory)	

Rationale of Course: Through this course, students will learn the basic concepts of different economic theories, and its principles and Explore relation between economy and architecture. It also has the opportunity to study social concepts, scope, its evolution process and social structure; social and cultural impacts on spatial/settlement formation

Course Content: Definition of economics; economics and architecture; principles of economics: micro economics: the theory of demand and supply and their elasticity; price determination; nature of an economic theory, applicability of economic theories to the problems of developing countries; indifference curve technique, marginal analysis, optimization; market, production, production function, types of productivity, rational region of production of an engineering firm; the short run and the long run; fixed cost and variable cost; internal and external economics and diseconomies; macro-economics: savings, investment. national income analysis. inflation. monetary policy, fiscal policy and trade policy with reference to Bangladesh; planning in Bangladesh.

Scope, basic concepts, social evolution and techniques of production; culture and civilization; social structure of Bangladesh; population and world resources; oriental and occidental societies; industrial revolution; family, urbanization and industrialization; cooperative and socialist movements; socio cultural basis of formation of settlements; spatial manifestations of societal norms.

Mapping Course Learning Outcomes (CLOs) with the Teaching-Learning and Assessment Strategy

Course Learning Outcomes (CLOs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Describe basic concepts of different economic theories, and its principles and explore relation between economy and engineering.	Exempted	Admission test/Class and Examination conducted in Diploma in Engineering
CO2	Apply economic theories through appropriate techniques and analysis.		
CO3	Recognize various social concepts, scope, its evolution process and social structure.		
CO4	Analyze social and cultural impacts on settlements.		

Mapping of Course Learning Outcomes (CLOs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2				√								
CO3	√											
CO4	√					√						

20.2 1st Year 2nd Semester

20.2.1 ARCH 1122

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 1122 COURSE TITLE: Design Studio II		
CREDIT: 4.5 (9hrs/week)	TERMS OFFERED: 1 st year 2 nd semester	
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course Type: Core Sessional	Pre-requisites: ARCH 1112	Co-requisites: N/A

Rationale of Course: The aim of this course is to develop understanding basic principles and process of design by observing nature and involving active process of inquiry. It will enable students to compose with the basic elements on 2D surface following the architectural design principles. This course has opportunity to exercise with different color schemes, process of 3D form generation and relationship of form and space. It enables students to develop abstract thinking, idea generation, representation and design development.

Course Content: experiments with different color schemes and the relationship between color, form and space; exercises to understand the process of 3d form generation and the interaction between form and space; exercises related to abstract thinking and representation through design.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -	Teaching-Learning Strategy	Assessment Strategy
CO1 Explore color schemes, fundamental design principles (primary elements, composition of form and space, proportion and scale, ordering principles) and the process of design with an emphasize on three dimensions.	Classroom lecture, discussion, demonstration, free hand sketch	Class Assessments
CO2 Analyze the color schemes and relationship between color, form and space in 3D composition.	Classroom lecture, demonstration and model making	Class Assessments
CO3 Design 3D spaces by exploring creative processes, abstract thinking and architectural design principles.	Classroom lecture, demonstration, model making and installations.	Class Assessments/ Final Presentation

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√									√		
CO2		√	√									
CO3		√	√						√	√		

20.2.2 ARCH 1222

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 1222 COURSE TITLE: Architectural Graphics I		
CREDIT: 1.5 (3hrs/week)	TERMS OFFERED: 1 st year 2 nd semester	
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course Type: Core Sessional	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to introduce tools and techniques of mechanical and free hand architectural presentation drawings. This course has opportunity to Explore multiview drawings such as- plan, section and elevation including different rendering techniques and shade- shadow.

Course Content: Tools and techniques of mechanical and free hand architectural presentation drawings; multiview drawings such as- plan, section and elevation; different rendering techniques; shade- shadow.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Interpret plan, section, elevation, and different rendering techniques through architectural graphics.	Classroom instruction, exploratory discussion, architectural drafting and feedback.	Class Assessments
CO2	Apply the drawing methods to translate architectural elements through presentation.	Demonstration architectural drafting and feedback.	Class Assessments
CO3	Develop professional communication skills to produce architectural drawings.	Demonstration architectural drafting and feedback.	Class Assessments/ Final Presentation

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2		√										
CO3		√							√			

20.2.3 ARCH 1224

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 1224 COURSE TITLE: Computer Applications I		
CREDIT: 1.5 (3hrs/week)	TERMS OFFERED: 1 st year 2 nd semester	
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course Type: Core Sessional	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is orient students with the application of softwares for architectural presentation. This course has opportunity to Explore softwares for word processing, report writing and presentation. It also enables students to develop soft skills for image editing, manipulation and effects as wells as designing effective visual and graphical presentations using vector and raster graphics software.

Course Content: Softwares for word processing, report and assignment writing and presentation; basic principles and techniques of image, color, resolution, photo manipulation and effects using software e.g., Adobe Photoshop, Lightroom; application of vector and raster graphics software such as- adobe illustrator, corel draw for 2d illustrations and printing.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Identify specific software tools and techniques for word processing, report or assignment writing and multimedia presentation.	Classroom instruction, exploratory discussion.	Class Assessments
CO2	Analyze the procedures and techniques of scanning, printing media and printing.	Classroom instruction, demonstration hands on exercises.	Class Assessments
CO3	Create effective visual and graphical presentations applying principles of design for composition and layout using vector and raster graphic softwares.	Classroom instruction, demonstration and hands on exercises.	Class Assessments/ Final Presentation

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√									√		
CO2					√					√		
CO3		√			√				√			

20.2.4 ARCH 1521

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 1521 COURSE TITLE: History of Architecture I		
CREDIT: 2 (2hrs/week)	TERMS OFFERED: 1 st year 2 nd semester	
Exam Hours: 0.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Core Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to introduce history of architecture as a perceptual process of evolution from climatic, geographic, social, political, cultural, technical and religious point of view. It presents architectural styles of ancient ages and also includes comparative study of different architectural styles of Greek and Roman periods.

Course Content: Overview of the perceptual process of evolution in architecture of ancient civilizations; critical evaluation of ancient architecture and settlement design of Egyptian (3000 bc-ad 1st century) and West Asiatic (3000 bc-331 bc) civilizations. influences; architectural characteristics; examples of mastabas, pyramids, tombs and temples; comparative analysis of Egyptian architecture. influences, architectural characteristics of West Asiatic architecture; examples of Babylonian (3000-1250 bc) and Neo-Babylonian (612-539 bc) architecture; Assyrian (1250-615 bc) architecture; Persian (539-331 bc) architecture; Seleucid, Parthian and Sassanian (312 bc- 641 ad) architecture; Hittite (1750-1200 bc) architecture and architecture in Syria (2000-700 bc). Meso-American, Aegean, Etruscan, Chinese and Japanese architecture.

Introduction to classical Architecture of Greece (800 BCE-300 BCE) and Rome (484 BCE-608CE); critical evaluation of classical architecture of Greece and Rome from political and social point of view; critical evaluation of architecture of Indian civilization from political, social and philosophical point of view; study of potentiality of classical architecture in formation of ordering principles; analysis of architectural features of Greece and Roman architecture.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Explain acquired knowledge of significant structures and buildings in their historical, regional and cultural contexts.	Class Lecture and exploratory discussions	Final Exam/Class Test
CO2	Compare different architectural styles and construction techniques of prehistoric, Greek and Roman periods.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment

CO3	Critically analyze the construction techniques, architectural problems, practice and solutions of architecture during the periods covered.	Class Lecture and exploratory discussions	Final Exam/Class Test
CO4	Evaluate the technical and formal architectural vocabulary of prehistoric, Greek and Roman periods.	Class Lecture and exploratory discussions	Final Exam/Class Test

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2	√											
CO3				√								
CO4				√								

20.2.5 HSS 1621

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: HSS 1621 COURSE TITLE: English Language		
CREDIT: 2.0 (2hrs/week)	TERMS OFFERED: 1 st year 2 nd semester	
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Core Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: This course is designed to improve student’s communicative competence that they will apply in their core courses as well as later in their career development. It will further enhance their proficiency in reading, grammar, vocabulary, writing and listening.

Course Content: Parts of Speech and word classification; word formation and affixation, joining sentences; reading skill: skimming, scanning, inferring, predicting, transformation of sentences (assertive to integrative and simple to complex and vice-versa), IPA symbols (vowel and Consonant), phonetic transcription, appropriate preposition, business letters: placing order, complaint letter, adjustment letter, technical report writing (features and methodologies), information transfer.

Right form of verbs (subject verb agreement, conditionals), infinitive, gerund and participles; WH questions, clauses and complex sentences; error correction (right forms of verbs, subject verb agreement, preposition, punctuation and capitalization); writing short and long composition (topic sentences, supporting details, linking words); business correspondence: cv and cover letter, e-mail writing, reading skill, paraphrasing.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Explain the features of target language to meet various communication needs.	Class Lecture and problem solving	Final Exam/Class Test
CO2	Analyze the linguistic and grammatical aspects of contextual source materials in target language.	Class Lecture and problem solving	Final Exam/Class Test
CO3	Apply grammatical and communicative knowledge in other related courses and areas for effective communication individually and in groups.	Class Lecture and problem solving	Final Exam/Class Test
CO4	Evaluate information from different reading sources for contextual and lexicographical meanings associated with professional and ethical responsibility.	Class Lecture and problem solving	Final Exam/Class Test

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2	√								√			
CO3	√								√			
CO4	√							√	√			

20.2.6 Math 1621

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: Math 1621 COURSE TITLE: Mathematics		
CREDIT: 3.0 (3hrs/week)	TERMS OFFERED: 1 st year 2 nd semester	
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Core Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The goal of this course is to make students familiar with the fundamental concepts, theorems and application of differential and integral calculus, as well as introduce coordinate geometry which will provide natural aid to understanding of geometry and physical concepts.

Course Content: Differential Calculus-function, limit, continuity, differentiation, successive and partial differentiation; rolle’s theorem; mean value theorem; expansion of functions; tangent and normal; maxima and minima; Integral Calculus - integration by various methods; definite integrals; length of curves; area bounded by plane curves; volumes and surface areas of solids of revolution.

Co-ordinate geometry of two dimensions; transformations of co-ordinates; pair of straight lines; circle; co-axial circle; tangent and normal at a point on a circle; general equation of second degree. co-ordinate geometry of three dimensions; distance between points; angle between two straight lines; plane through three points; angle between two planes; straight line through two points.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Remember the basic definitions, theories and properties of calculus and coordinate geometry.	Class Lecture and problem solving	Final Exam/Class Test
CO2	Understand the core ideas and concepts of differential calculus, integral calculus, and coordinate geometry in two and three dimensions.	Class Lecture and problem solving	Final Exam/Class Test
CO3	Apply the concepts and principles of differential, integral calculus, straight lines, circles and planes to problem solving in engineering fields.	Class Lecture and problem solving	Final Exam/Class Test
CO4	Analyze the behaviour of the function, its derivatives, by using calculus and shapes and dimensions of geometrical objects and their other properties by using analytic geometry.	Class Lecture and problem solving	Final Exam/Class Test

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2				√								
CO3				√								
CO4				√								

20.2.7 Phy 1621

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: Phy 1621 COURSE TITLE: Physics		
CREDIT: 3.0 (3hrs/week)	TERMS OFFERED: 1 st year 2 nd semester	
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Core Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The aim of this course is to develop proper understanding of physical phenomenon, scientific temper and architectural aptitude. This course has opportunity to study physical properties through an understanding of properties of matter, optics, thermal physics, waves and acoustics for architectural application.

Course Content:

Thermal Physics: Kinetic theory of gases: kinetic calculation of pressure, temperature and energy, ratio of specific heats, atomicity of gas molecules, mean free path; equation of state: van der waal's equation of state, critical constants, van der waals constant; thermal conductivity: rectilinear, cylindrical and spherical flow of heat, heat flow through compound walls, accretion of ice on ponds; thermodynamics: zeroth law and first law of thermodynamics and their applications, thermodynamic processes, isothermal and adiabatic gas equation and work done, reversible and irreversible processes; second law of thermodynamics: the carnot cycle; entropy: entropy of a perfect gas.

Waves and Acoustics: Wave motion: types of wave motion, expression for plane progressive wave, energy calculation of stationary and progressive wave, interference of sound wave, beats, doppler effect; oscillation: the simple harmonic wave equation and its solution, composition of simple harmonic motion- lissajou's figures, damped harmonic motion and its solution, forced oscillation and resonance; acoustics: definition, reverberation, sabine's reverberation formula and problem involving building acoustics.

Optics: Interference: Huygen's principle, Young's experiment, Coherent sources and it's production methods, analytical treatment of interference, interference due to thin films, Newton's rings; Diffraction: Fresnel and Fraunhofer diffraction, Fraunhofer diffraction by single and double slit, plane diffraction grating, resolving and dispersive power of a grating; polarization: polarization by reflection, refraction and double refraction, Brewster's law and Malus law, elliptical and circular polarization of light.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Describe the thermal properties, basic of building acoustics required for a professional architect, basic requirements of a big hall with least possible noise, polarized and unpolarized light..	Class Lecture and problem solving	Final Exam/Class Test
CO2	Calculate thermal properties, wave energy, wavelengths, frequency, epoch, wavelength of monochromatic light, refractive index, resolving power and dispersive power of a grating, wavelength of monochromatic light, refractive index, resolving power and dispersive power of a grating etc.	Class Lecture and problem solving	Final Exam/Class Test
CO3	Analyze their understanding about heat and thermodynamics for calculating thermal properties like thermal conductivity, Van der Waals constant, entropy, atomicity, elasticity of gases, enthalpy, free-energy etc.	Class Lecture and problem solving	Final Exam/Class Test

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2	√			√								
CO3	√			√								

20.3 2nd Year 1st Semester

20.3.1 ARCH 2112

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 2112 COURSE TITLE: Design Studio III		
CREDIT: 4.5 (9hrs/week)	TERMS OFFERED: 2 nd year 1 st semester	
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course Type: Core Sessional	Pre-requisites: ARCH 1122	Co-requisites: N/A

Rationale of Course: The aim of this course to develop understanding about the design process emphasizing on the relationship among human, space and form: anthropometrics and ergonomics, conceptualization, generation of forms, experimentation with various types of functions and spaces. It enables students to solve basic human functions, determination of space requirements, understand scale and proportion. It has the opportunity to explore major design parameters- site and program analysis, function, and circulation through small scale design exercises.

Course Content: Study of relationship among human, space and form: anthropometrics and ergonomics, conceptualization, generation of forms, experimentation with various types of functions and spaces; understanding basic human functions, determination of space requirements, awareness of scale and proportion; investigation of major design parameters- site and program analysis, function, and circulation through small scale design exercises.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -	Teaching-Learning Strategy	Assessment Strategy
CO1 Interpret basic functional understanding and relationship between anthropomorphic dimensions, ergonomics, and design.	Class lecture, study and analysis	Class Assessments
CO2 Formulate space requirement and detail program for projects.	Class lecture, demonstration, discussion.	Class Assessments
CO3 Propose design solutions by considering basic human functions, programs, site and climatic constraints, and relationship between human, space, form, scale and proportion.	Class lecture, demonstration, discussion, model making and feedback	Class Assessments and Final Jury
CO4 Communicate architectural design thinking both in verbal and written form using a wide range of representational media.	Demonstration, discussion, model making and feedback	Class Assessments and Final Jury

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1				√								
CO2				√								
CO3		√	√				√					
CO4		√							√			

20.3.2 ARCH 2212

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 2212 COURSE TITLE: Architectural Graphics II		
CREDIT: 1.5 (3hrs/week)	TERMS OFFERED: 2 nd year 1 st semester	
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course Type: Core Sessional	Pre-requisites: ARCH-1222	Co-requisites: N/A

Rationale of Course: Through this course, students are introduced with architectural presentation and rendering. It will demonstrate various mechanical perspective such as axonometric drawings, one-point perspective, two-point perspective and three-point perspective. It will develop skills to produce detail rendering presentation of a single project with shade and shadows.

Course Content: Execution of various drawing tools; mechanical drawings of architectural perspectives; single view drawings such as axonometric drawings; preparation of complete presentation and rendering of a single project.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -	Teaching-Learning Strategy	Assessment Strategy
CO1 Produce one and two-point perspective of objects and buildings from plan, elevation and section.	Class Lecture, demonstration	Class Assessments
CO2 Create axonometric drawings of objects and buildings from plan, elevation and section.	Class Lecture, demonstration and architectural drafting	Class Assessments
CO3 Produce complete architectural presentation and rendering of simple projects.	Class Lecture, demonstration and architectural drafting	Class Assessments/ Final Presentation

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1		√							√			
CO2		√							√			
CO3		√							√			

20.3.3 ARCH 2411

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 2411 COURSE TITLE: Climate and Design		
CREDIT: 2.0 (2hrs/week)	TERMS OFFERED: 2 nd year 1 st semester	
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Core Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: This course aims to develop basic understanding about global climatic elements, factors and classification of tropical climate. This course has also opportunity to study principles and nature of heat, heat regulatory mechanism of body and heat exchange of buildings for architectural application. It will enable student to apply their knowledge in designing passive buildings; developing sites and communities considering the climatic issues in tropical climate.

Course Content: Global climatic factors and solar geometry, elements of climate and their influence, tropical climate, various climatic zones and their characteristics, site climate; thermal comfort and the desirable conditions: thermal comfort factors, thermal comfort indices, effective temperature and its uses; principles of thermal design: thermal quantities, heat exchange of buildings, periodic heat flow.

Environment and built form relationship; passive means of climatic control in the built environment; thermal design criteria, principles of thermal design and natural ventilation; relationships between architecture and climatic characteristics of tropical regions; investigation of the problem and understanding the means of passive cooling in buildings in tropical climate.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Describe global climatic factors, elements of climate, classification of climates and means of controlling climate inside buildings.	Class Lecture	Final Exam/Class Test
CO2	Explain thermal comfort factors, indices, comfort scales, principles of thermal design and means of thermal control to ensure indoor thermal comfort.	Class Lecture and exploratory discussions	Final Exam/Class Test
CO3	Calculate thermal load of an indoor space, size of installation in case of active control for a local context.	Class Lecture and problem solving	Final Exam/Class Test/Assignment
CO4	Recommend passive strategies for designing climate responsive sites, buildings and communities in the context of local and tropical climate.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2	√											
CO3				√								
CO4				√			√					

20.3.4 ARCH 2511

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 2511 COURSE TITLE: History of Architecture II		
CREDIT: 2.0 (2hrs/week)	TERMS OFFERED: 2 nd year 1 st semester	
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Core Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to understand the critical evolution of architecture in Europe through the ages of Early Christian, Byzantine and Romanesque periods and revival of classical thoughts in the Renaissance periods. It will enable students to evaluate climatic, geographical, social, technical, religious influences on architecture and compare different styles of various regions of Europe in these periods.

Course Content: Influential factors and features of Early Christian architecture with examples (2nd to 5th century); Context, background, architectural features, and construction techniques of Byzantine period with examples from various regions (early and mid-era, 3rd to 12th century); Romanesque period (6th to 11th century): influences and features; examples of Italian Romanesque from central and northern part; examples of French Romanesque from Northern and Southern parts.

Context, background and influences on the Architecture of the various regions of Europe in medieval period (5th to 16th century); architectural characteristics of English Medieval architecture with examples; background and architectural characteristics of Gothic architecture in Europe (12th to 16th century) with example; context and background of Renaissance architecture in Europe (15th to 17th century); architectural characteristics of Early Renaissance, Baroque and Proto Baroque period with examples; comparative analysis of the architectural styles of the periods covered;

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -	Teaching-Learning Strategy	Assessment Strategy
CO1 Explain the influences and societal forces behind the architectural design and the process of creating new architectural trend in Europe from Early Christian to Renaissance periods.	Class Lecture and exploratory discussions	Final Exam/Class Test
CO2 Critically analyze the construction techniques, architectural problems, practice, and solutions of these periods.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment

CO3	Evaluate the technical and formal architectural vocabulary of different regions of Europe from 2 nd to 17 th century AD.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
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Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2				√		√						
CO3				√								

20.3.5 CE 2011

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: CE-2011 COURSE TITLE: Plumbing		
CREDIT: 2.0 (2hrs/week)	TERMS OFFERED: 2 nd year 1 st semester	
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Core Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to introduce basic knowledge of plumbing, water sources and water requirements. It also develops the skill to calculate future water quantity for satisfying future water demand. It has also opportunity to study building sewer and sewage disposal. This course also enables a student to apply his knowledge and understanding in water supply and drainage systems in high rise buildings.

Course Content: Introduction of plumbing system, sources of water, water requirements, water transmission and distribution, water supply and sanitation system in buildings; introduction to water supply systems in high rise buildings; financial aspects of water supply and sanitation system.

Sewage and sewer system, building sewer and drainage system, sewage disposal; introduction to drainage systems in high rise buildings.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Explain sewer, sewage system, building sewer, sewage disposal, connection between water supply and sanitation systems and importance of water source and its requirements.	Class Lecture and discussion	Final Exam/Class Test
CO2	Calculate future water quantity for satisfying future water demand and water pricing.	Class Lecture and problem solving	Final Exam/Class Test/Assignment
CO3	Apply the basic principles of water supply and drainage systems in high rise buildings.	Class Lecture and problem solving	Final Exam/Class Test/Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2				√								
CO3				√								

20.3.6 CE 2111

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: CE 2111 COURSE TITLE: Structure I		
CREDIT: 2.0 (2hrs/week)	TERMS OFFERED: 2 nd year 1 st semester	
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Core Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to develop understanding about fundamental concepts and issues of mechanics using extensive workout examples. This course will also develop thinking ability to set and solve practical engineering problems.

Course Content: Force; equilibrium, free body diagrams; resultants and Components; coplanar Concurrent forces; moments and parallel coplanar forces.

Centroid; moment of Inertia of areas; Maximum and minimum forces; friction; flexible chord; calculation of bar forces for simple trusses.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Identify different types of forces and force systems.	Class Lecture and problem solving	Final Exam/Class Test
CO2	Sketch the free body diagrams of members.	Class Lecture and problem solving	Final Exam/Class Test/ Assignment
CO3	Calculate the practical engineering problems related to force, equilibrium, resultants and components, coplanar concurrent forces, moments and parallel coplanar forces, centroid, moment of inertia of areas, maximum and minimum forces, friction, flexible chord, bar forces for simple trusses.	Class Lecture and problem solving	Final Exam/Class Test

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2	√			√								
CO3				√								

20.4 2nd Year 2nd Semester

20.4.1 ARCH 2122

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 2122 COURSE TITLE: Design Studio IV		
CREDIT: 6 (12 hrs/week)	TERMS OFFERED: 2 nd year 2 nd semester	
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course Type: Core Sessional	Pre-requisites: ARCH 2112	Co-requisites: N/A

Rationale of Course: Through this course, students are introduced with climate in architectural design and aspects that affect the built environment. This course will also include experimentation with various types of forms with functional complexity in a particular site and relationships between them. It has also the opportunity to study different types of entry approach, functional layout, mass orientation, building envelop, and path-circulation relationship.

Course Content: Understanding of basic concepts of architectural forms and identification of spaces in terms of exterior- interior, served- service, activity- circulation etc; understanding relationship between form and function in architecture through case studies; formulate ingenious architectural program to generate site specific architectural form.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Interpret basic understandings of space requirements, complex functional sequence, basic concepts of architectural forms and identification of spaces in terms of exterior- interior, served- service, activity- circulation through case studies.	Class Lecture, study and analysis	Class Assessments
CO2	Formulate ingenious architectural program to generate site specific architectural form in three dimensions.	Class instruction, demonstration, discussion and feedback	Class Assessments
CO3	Experiment with three-dimensional form, function, circulation and space quality.	Class instruction, demonstration, discussion, model making and feedback	Class Assessments
CO4	Propose design solutions by considering user requirements, site and climatic constraints with a special emphasis on form, function and space relationship.	Class instruction, demonstration, discussion, model making and feedback	Class Assessments and Final Jury
CO5	Communicate architectural design thinking both in verbal and written form using a wide range of representational media.	Demonstration, exploratory discussion, model making and feedback	Class Assessments and Final Jury

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1				√								
CO2				√		√						
CO3		√							√			
CO4		√	√				√					
CO5		√							√			

20.4.2 ARCH 2421

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 2421 COURSE TITLE: Architectural Acoustics and Lighting Design		
CREDIT: 2.0 (2hrs/week)	TERMS OFFERED: 2 nd year 2 nd semester	
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Core Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of course: This course will introduce students to the necessity and basic principles of architectural acoustics and lighting. This course has the opportunity to Explore the properties of sound, its behavior, concepts of controlling sound and principles of acoustical design of different types of space. Students will also Explore the principles of lighting, necessity of lighting in buildings, calculation of lighting quantity for different activities and building types.

Course Content: The physiology of sound; perception, generation, and propagation of sound. behavior of sound in enclosed spaces; principles of acoustic design of rooms for speech, music and multipurpose use; concept of noise and noise control; criteria for noise control design and acoustical measurements; auditorium acoustics.

Light and its nature, principles, architectural lighting; nature of light: transmission, reflection, munsell system, photometric quantities, inverse square law, cosine law, scalar illumination, visual efficiency, visual field, day lighting, daylight factor concept, design sky values; visual comfort, contrast, glare; day lighting in tropics, design consideration for day lighting; artificial lighting systems; artificial lighting design concepts: utilization factor concept, watt per square foot method; effects of luminous environment on human being.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Describe the properties of sound and its behavior, principles of acoustics, light and its nature, lighting and photometric terminologies, architectural lighting; daylighting and artificial lighting design concepts.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment
CO2	Analyze the sound control and noise reduction concepts for their effective use, nature of light, design consideration for	Class Lecture and exploratory discussions	Final Exam/Class Test/

	daylighting; artificial lighting systems, and effects of luminous environment on human being.		Assignment
CO3	Recommend the criteria for noise control design and acoustical measurements; auditorium acoustics, design consideration for daylighting; artificial lighting systems, different lighting design techniques with respect to function and need of the space.	Class Lecture and exploratory discussions, hands-on experiment	Final Exam/Class Test/Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2	√			√								
CO3				√			√					

20.4.3 ARCH 2521

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 2521 COURSE TITLE: History of Architecture III		
CREDIT: 2.0 (2hrs/week)	TERMS OFFERED: 2 nd year 2 nd semester	
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Core Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: This course will introduce students with the significant events, styles, architects, buildings and other factors that would lead to an understanding of why various cultures produced the architecture of their time under the Buddhist, Hindu and Muslim rule in South Asia mainly the Indian sub-continent between 3000 B.C-17th century AD. It also develops skills to identify and interpret the architectural styles, construction techniques of South Asian Architecture through appropriate architectural illustrations, written and verbal means.

Course Content: Chronological development of South Asian Architecture; architectural features of Indus valley civilization, Vedic period; architectural development in Buddhist period- Hinayana and Mahayana phases of Buddhism; Hinduism and development of Hindu architecture (up to 17th Century)- conception of a deity and form of Indian Temple; ritual, function and symbolism; development of different styles of Hindu temple with reference to political, social and religious context.

Critical evaluation of the art and architecture under the Muslim rule in South Asia mainly the Indian sub-continent; The advent of the Muslims in the 11th-17th century AD in this region; sources of Muslim Architecture in South Asia Region; climatic, geographical, religious and social influences on the Architecture of the various regions of South Asia in Imperial style (Slave, Khilji, Tughlaq, Sayyid and Lodi Dynasty); Sur or Pathan period; Mughal period.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Explain the context, background, influences, chronological development and characteristics of South Asian architecture between 3rd century B.C to 17th century AD under the Buddhist, Hindu and Muslim rule.	Class Lecture and exploratory discussions	Final Exam/Class Test
CO2	Compare the architectural styles and construction techniques during the periods covered.	Class Lecture and exploratory discussions	Final Exam/Class Test
CO3	Critically analyze the construction techniques, architectural problems, practice and solutions of South Asian architecture from 3000 BC to 17 th Century AD.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment
CO4	Evaluate the technical and formal architectural vocabulary of South Asian architecture from 3000 BC to 17 th Century AD.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2				√								
CO3				√		√						
CO4				√								

20.4.4 ARCH 2621

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 2621 COURSE TITLE: Basic Physical Planning		
CREDIT: 2.0 (2hrs/week)	TERMS OFFERED: 2 nd year 2 nd semester	
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Core Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of course: The main objective of the course is to provide a clear understanding of planning and policy making. This course has opportunity to study physical planning, ideals and process of it, resources in planning process and use, past planning initiatives in Bangladesh. It also introduces students to theories of Human settlements, forms and nature of cities, spatial structures of city, growth of urban settlement, planning concepts of both modern and ancient cities.

Course Content: Physical Planning definition, planning theories, physical planning ideals and types, factors in the physical planning process; understanding urban area (city, town), rural area and region; theories and process of land use planning and infrastructure planning.

Understanding ‘resource’ and its use; planning history of Bangladesh, planning organizations, problems of planning and implementation deficiency in Bangladesh.

Origin and evolution of settlements and cities; city planning during ancient, classical medieval, neo-classical and modern periods; industrial revolution and changes in the character of cities, new thoughts and ideas in planning after the industrial revolution; spatial structure of cities: concentric zone theory, sector theory, multiple nuclei theory, Christaller theory of size, spacing and distribution of central places; Rank-size rule.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Describe physical planning, city, town, rural area, region, planning resource, planning ideals, Bangladesh planning organizations, land use planning, origin, evolution of settlements and cities, city planning, classical medieval, neo-classical and modern period.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment
CO2	Explain planning theories, physical planning process, land use planning, industrial revolution, after effects of industrial revolution, spatial structure, multiple theories.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment
CO3	Evaluate planning in Bangladesh, land use planning, multiple theories, size, spacing and distribution places.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2						√						
CO3				√		√						

20.4.5 CE 2121

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: CE 2121 COURSE TITLE: Structure II		
CREDIT: 2.0 (2hrs/week)	TERMS OFFERED: 2 nd year 2 nd semester	
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Core Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of course: This course will demonstrate the fundamental concepts of stress and strain; mechanical properties of materials; stresses and strains in members subjected to tension, compression, shear and temperature changes. It will also develop understanding about Joints- welded and riveted; shear force and bending moment diagrams for statically determinate beams and frames.

Course Content: Fundamental concepts of stress and strain; mechanical properties of materials; stresses and strains in members subjected to tension, compression, shear and temperature changes.

Joints- welded and riveted; shear force and bending moment diagrams for statically determinate beams and frames.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Identify various types of stresses, strain and others mechanical properties of the objects under tension, compression, shear and temperature changes.	Class Lecture and problem solving	Final Exam/Class Test
CO2	Analysis members subjected to tension, compression, shear, bending moment and temperature changes.	Class Lecture and problem solving	Final Exam/Class Test
CO3	Calculate the reactions, axial force, shear force and bending moments of statically determinate beams and frames under any kind of loads.	Class Lecture and problem solving	Final Exam/Class Test/ Assignment
CO4	Design different types of riveted and welded connections under loads.	Class Lecture and problem solving	Final Exam/Class Test

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2				√								
CO3				√								
CO4				√								

20.5 3rd Year 1st Semester

20.5.1 ARCH 3112

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 3112 COURSE TITLE: Design Studio V		
CREDIT: 6 (12 hrs/week)	TERMS OFFERED: 3 rd year 1 st semester	
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course Type: Core Sessional	Pre-requisites: ARCH 2122	Co-requisites: N/A

Rationale of Course: This course will develop skills to analyze and design complex building problems/programs emphasizing innovative ideas. It has the opportunity to Explore the relationship between building function, form and structure incorporating formal and functional expressions, environmental qualities, circulation (vehicular and pedestrian), linkages, organization and site parameters.

Course Content: Design exercises on complex building problems/programs emphasizing innovative ideas; exploring the relationship between building function, form and structure incorporating formal and functional expressions, environmental qualities, circulation (vehicular and pedestrian), linkages, organization and site parameters.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Explore different structural systems and the relationship between function, formal expression, space and structural systems.	Class lecture, study and analysis, field survey.	Class Assessments/Final Jury
CO2	Experiment with contemporary architectural forms with special emphasis on the spatial quality and structural systems.	Demonstration model making and feedback.	Class Assessments/Final Jury
CO3	Formulate design solutions with complex functions, site constraints, environmental parameters and appropriate structural system.	Demonstration, exploratory discussion, and feedback.	Class Assessments/Final Jury
CO4	Communicate architectural design thinking both in verbal and written form using a wide range of representational media.	Class Lecture, demonstration, exploratory discussion, model making and feedback	Class Assessments/Final Jury

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1				√								
CO2		√										
CO3		√	√				√					
CO4		√							√			

20.5.2 ARCH 3312

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 3312 COURSE TITLE: Working Drawing I		
CREDIT: 1.5 (3hrs/week)	TERMS OFFERED: 3 rd year 1 st semester	
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course Type: Core Sessional	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The aim of this course is to develop skills to produce working drawing of different building types. It includes preparation of construction drawings with understanding of construction process and technique, production and management.

Course Content: Study of professional drawings; basic understanding of architectural working drawing; site plan, floor plans, various layout plans, elevations, sections of residential building, office building, mixed use building with proper scheduling.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Demonstrate the basic understanding of architectural working drawing.	Class Lecture, demonstration	Class Assessments
CO2	Convert the architectural design of any types of buildings into working drawings.	Demonstration and architectural drafting	Class Assessments
CO3	Prepare architectural working drawings such as plan, elevation, section of a residential building, office building, mixed use building with proper scheduling.	Class Lecture, demonstration and architectural drafting	Class Assessments/ Final Presentation

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2			√						√			
CO3			√						√		√	

20.5.3 ARCH 3311

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 3311 COURSE TITLE: Ecology		
CREDIT: 2.0 (2hrs/week)	TERMS OFFERED: 3 rd year 1 st semester	
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Core Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to develop understandings about Eco- system, urban eco- systems. It will explain different urban ecological frameworks, how cities and urban systems are affected by concepts of economy, politics, culture, justice, and equity through case studies.

Course Content: Definition and Concepts of Ecosystems; Ecosystem Structure: Order in nature, Food chain and webs; decomposition and ecological pyramids; ecosystem dynamics: energy flows, material re-cycling, nutrients, productivity, ecosystem boundaries; demographic factors and processes: population distribution, growth and change, regional differences.

Emerging Framework of Urban Ecology; exploration of systems plus infrastructure; systems integration and resilience of urban ecosystems; human, cultural, political and economic factors of urban ecology; practice and the role of designers.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Describe concept, and structure of ecosystem, ecosystem dynamics, demographic factors and processes, urban ecology, essential parts and systems of urban ecology.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment
CO2	Explain ecosystem structure, ecological pyramids, demographic factors and processes and regional differences, specific parts and systems of urban ecosystem	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment
CO3	Analyze the relationship among human, ecosystem and infrastructure, material and energy flows in urban ecosystem, correlation between urban ecosystems and global trends.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment
CO4	Evaluate the issues of risk and resiliency of systems, role of urban designer, planners and architects within urban ecosystems	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2				√								
CO3				√			√					
CO4				√			√					

20.5.4 ARCH 3511

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 3511 COURSE TITLE: Modern and Contemporary Architecture		
CREDIT: 2.0 (2hrs/week)	TERMS OFFERED: 3 rd year 1 st semester	
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Core Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to investigate socio, economic, political and environmental factors behind the development of architectural styles in the Eastern and Western world. It presents theories, ideologies and practices in architecture modern and contemporary period.

Course Content: Introduction to modernism: industrial revolution, significance of school of fine arts; movements of modernism: the formation of Bauhaus, International Style and its development; 19th Century realism. impressionism, post impressionism, cubism, fauvism,

expressionism, purism, orphism, futurism and vorticism; practice to the works of modern masters such as Le Corbusier, Louis I Kahn, Frank Lloyd Wright, Mies Van Der Rohe and Alvar Alto; crisis of modernism; critiquing modernism; works of Ventury, Graves and others in response to crisis of alienation of modern architecture;

Introduction to contemporary approaches: post modernism; late modern technological exploration of “High-Tech” by Foster, Rogers, Piano and others; influence of post-structuralist ideas in the avant-grade works of Eisenmann, Gehry, Hadid, Libeskind and others; rise of self-conscious modernism in Indian subcontinent through the works of Mazharul Islam, Doshi, Correa; redefining contextuality in the regionalism of Fathy, Bawa and Baragan; unique South-Asian sensibility in the works of Tange, Ando, Kerry Hill and Ken Yang; ecological consciousness and issues of sustainability in the works of Glenn Murcutt.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Explain impacts behind the formation of modern and contemporary architecture, related theories, movements, conceptual thoughts and philosophies of architects.	Class Lecture and exploratory discussions	Final Exam/Class Test
CO2	Analyze different movements and approaches that shaped modern and contemporary architecture and compare works of modern masters and contemporary architects.	Class Lecture and exploratory, discussions	Final Exam/Class Test/ Assignment
CO3	Evaluate different architectural works and impacts on respective environments.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√					√						
CO2				√								
CO3				√								

20.5.5 CE 3111

DEGREE PROGRAM: Bachelor of Architecture		
COURSE CODE: CE 3111		
COURSE TITLE: Structure III		
CREDIT: 2.0 (2hrs/week)	TERMS OFFERED: 3 rd year 1 st semester	
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Core Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to deliver a clear understanding about flexural and shearing stress, relationships between depth and stresses, calculation

methods of slopes, deflections in statically determinate beam. It will also explain analysis procedures of indeterminate beam, design of column sections from a floor plan and buckling of columns.

Course Content: Flexural and shearing stresses in beams; direct integration and area moment methods for finding slopes and deflections in statically determinate beams.

Principal stresses; Indeterminate beam analyses; buckling of columns.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Explain flexural stresses, shearing stresses, deflections in statically determinate beams using direct integration and area moment methods, principal stresses and buckling of columns.	Class Lecture and problem solving	Final Exam/Class Test/ Assignment
CO2	Determine suitable span length for column and floor by applying the knowledge about the deflection of determinate beam.	Class Lecture and problem solving	Final Exam/Class Test/ Assignment
CO3	Differentiate the determinate and indeterminate beam and select the appropriate beam using the knowledge of analysis of stress.	Class Lecture and problem solving	Final Exam/Class Test
CO4	Select proper height, thickness of beam and column section for a primary architectural plan.	Class Lecture and problem solving	Final Exam/Class Test

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2				√								
CO3				√								
CO4				√								

20.5.6 HSS 3611

DEGREE PROGRAM: Bachelor of Architecture		
COURSE CODE: HSS 3611		
COURSE TITLE: Logic and Philosophy		
CREDIT: 2.0 (2hrs/week)	TERMS OFFERED: 3 rd year 1 st semester	
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Core Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: This course will acquaint students with various philosophical traditions, chief philosophic problems and types of Philosophy. It has opportunity to cultivate the art and skill of philosophical analysis as well as the intellectual, civic, and moral virtues of the discipline of Philosophy. It will enable students to evaluate social, economic and environmental context for taking logical and argument decisions at their professional work.

Course Content: Introduction to deductive logic: definition and scope of deductive logic, terms and predicable; proposition and opposition of propositions; inference and syllogism; introduction to inductive logic: definition and scope of inductive logic; nature, characteristics and base of scientific induction; methods of scientific induction; nature of hypothesis; inference and analogy.

Introduction to Philosophy: Nature and Scope of Philosophy; relation of philosophy to other sciences methods of philosophical inquires, epistemology, metaphysics, ideas of great philosophers.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Explain a general history and development of logic and philosophy, deductive and inductive logic, nature of hypothesis, inference and analogy, epistemology, metaphysics and ideas of great philosophers.	Class Lecture and problem solving	Final Exam/Class Test/ Assignment
CO2	Apply logical and argumentum frameworks used in the discipline of architect for seeking.	Class Lecture and problem solving	Final Exam/Class Test/ Assignment
CO3	Analyze logical decision in personal, societal, organizational and national aspects based on values and behavior.	Class Lecture and problem solving	Final Exam/Class Test/ Assignment
CO4	Evaluate the architectural problems, practice and solutions by using logical and philosophical views.	Class Lecture and problem solving	Final Exam/Class Test/ Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2				√								
CO3				√								
CO4				√				√				

20.6 3rd Year 2nd Semester

20.6.1 ARCH 3122

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 3122 COURSE TITLE: Design Studio VI		
CREDIT: 6 (12 hrs/week)	TERMS OFFERED: 3 rd year 2 nd semester	
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course type: Core Sessional	Pre-requisites: ARCH 3112	Co-requisites: N/A

Rationale of Course: The main objective of this course is to develop student's ability to study and incorporate complex building forms, in the design of multi-functional buildings; analyze the relationship of vertical and horizontal zoning between different spaces functions

of a building; and provide students the basic knowledge of structural systems with other technical issues like fire safety, electro-mechanical system, plumbing etc.

Course Content: Comprehensive design exercise to understand the underlying complexity of building forms by exploring the characteristics of materials, structural systems, construction methods, building services and environmental requirements of high-rise buildings in relation to the formal expression of the architectural design; Emphasis will be placed on creative response to site and surroundings.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Identify different structural systems, its characters, environmental requirements and the fundamental acquaintance of various technical systems of a high-rise building.	Study and analysis, field survey (Optional) and feedback.	Class Assessments/ Final Jury
CO2	Discover the relationship between vertical and horizontal zoning, different aspects and issues of a building with its surrounding context.	Study and analysis, field survey (Optional) and feedback.	Class Assessments/ Final Jury
CO3	Experiment with complex architectural forms with special emphasis on the building services and structural systems.	Demonstration, exploratory discussion, , and feedback.	Class Assessments/ Final Jury
CO4	Formulate comprehensive design solutions for a high-rise building through appropriate illustrations.	Demonstration, exploratory discussion, , and feedback.	Class Assessments/ Final Jury

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1				√						√		
CO2				√		√	√					
CO3			√						√			
CO4		√	√			√	√		√			

20.6.2 ARCH 3621

DEGREE PROGRAM: Bachelor of Architecture		
COURSE CODE: ARCH 3621		
COURSE TITLE: Urban Design I		
CREDIT: 2 (2hrs/week)	TERMS OFFERED: 3 rd year 2 nd semester	
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course type: Core Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to introduce students with the theories, objectives, methods and techniques of urban design and its effect on built environment. The course also introduces ancient city planning concepts, modern and contemporary approaches of urban design, and relates them with contemporary urban design practice. Additionally, the course explores the opportunities of urban conservation.

Course Content: Definition of urban design, its aims and objective; Global view and Context; Development of urban spaces through history; Modern concepts in urban design; Elements and domains of urban design; Perception and meaning of urban spaces- Scale, form, order and time space relationships.

Principles and techniques of urban design; Analysis of physical pattern; Framework for development; Responsive environment – Connectivity, permeability, variety, legibility, appropriateness, richness and personalization; Contemporary concepts, context and trends; Urban renewal, redevelopment, conservation etc. and development control.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Describe basic urban design concepts-urban design, its goal, objectives, and conservation, urban renewal and redevelopment.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO2	Explain the principles, methods, techniques, elements, concepts and domain of urban design and the effect of it on the built environment, difference between urban design and urban planning, and different approaches of conservation.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO3	Analyze traditional and contemporary concepts and approaches of urban design.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO4	Design an urban environment using different urban design theories, methods and principles.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2	√											
CO3				√								
CO4				√		√	√					

20.6.3 CE 3121

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: CE 3121 COURSE TITLE: Structure IV		
CREDIT: 2 (2hrs/week)	TERMS OFFERED: 3 rd year 2 nd semester	
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Core Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: This course will introduce students enable students to learn behavior and design of different steel structure component. It will familiarize students with concepts of truss analysis considering different loading pattern and use, advantages, importance of locally available structural member.

Course Content: Introduction to allowable stresses, different types of trusses; wind and static load analysis of trusses; design of truss sections; Design of steel beams; columns; and timber structures.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Explain various types of load, allowable stresses of trusses, steel beams, columns, and timber structures.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO2	Design of different member in truss steel, beam, column and timber structures.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO3	Select the most suitable section shape and size for tension and compression members according to specific design criteria.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2				√								
CO3				√								

20.6.4 EEE 3121

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: EEE 3121 COURSE TITLE: Electrical Equipments		
CREDIT: 2 (2hrs/week)	TERMS OFFERED: 3 rd year 2 nd semester	
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Core Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: This course will develop skills to design lighting plans, basic electrical connections and basic electrical layout of residential, commercial and industrial installations. It will also develop sufficient insight of electrical quantities, measurements and circuit elements and ability to analyze and solve different electrical circuits using circuit laws and theorems.

Course Content: Illumination; lighting plan; different types of lighting; electrical equipments and connections; introduction to electrical wiring for residential, commercial and industrial installations and buildings.

Electrical units and standards; basic laws, methods of analysis; electrical networks and circuit theorems; introduction to alternating circuits (AC) and quantities; RLC series and parallel circuits; AC circuit analysis.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Explain illumination; lighting plan, different types of lighting, electrical equipments and connections, electrical wiring of buildings, electrical units and standards, basic laws, methods of analysis, electrical networks and circuit theorems, alternating circuits (AC) and quantities, RLC series and parallel circuits and AC circuit analysis.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO2	Analyze standard lighting requirements and electrical circuits using the circuit laws and theorems	Class Lecture and discussions	Final Exam/Class Test/Assignment
CO3	Design electrical layout of different types of installations.	Class Lecture and discussions	Final Exam/Class Test/Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√			√								
CO2				√								
CO3				√								

20.7 4th Year 1st Semester

20.7.1 ARCH 4112

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 4112 COURSE TITLE: Design Studio VII		
CREDIT: 6 (12 hrs/week)	TERMS OFFERED: 4 th year 1 st semester	
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course type: Core Sessional	Pre-requisites: ARCH 3122	Co-requisites: N/A

Rationale of Course: The main objective of this is to enable students to deal with different practical urban design challenges in their future practice through learning fundamental concepts and their application regarding Urban Design. The course will also enable students to design spaces analyzing environmental, social, economic factors, human needs and scale to generate urban form and architecture.

Course Content: Perception of urban context and the emergent forces that shape a city; understanding urban activities, movement and environmental aspects to attain livability in cities and quality of life; understanding urban design process – from program formulation to urban design interventions; articulation of architecture into the public realm through design of building complexes at urban scale and projects focusing on urban renewal - regeneration, conservation, redevelopment and rehabilitation of city blocks.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Interpret urban activities, movement and environmental aspects to attain livability in cities and quality of life according to social, economic, and physical processes which have continuously reshaped the city.	Classroom lecture, study and analysis, field survey, exploratory discussion and feedback.	Class Assessments/Final Jury
CO2	Apply a range of contemporary urban design knowledge using problem solving skills in a complex real-world situation.	Demonstration, exploratory discussion and feedback.	Class Assessments/Final Jury
CO3	Create urban design ideas and proposals integrating participatory approaches using a range of technical skills and different media.	Demonstration, exploratory discussion and feedback.	Class Assessments/Final Jury
CO4	Originate the architectural design issues and solutions through visualization and provide a holistic overview of urban design concepts.	Demonstration, exploratory discussion and feedback.	Class Assessments/Final Jury

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1						√	√			√		
CO2		√		√								
CO3		√	√						√			
CO4		√			√				√	√		

20.7.2 ARCH 4511

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 4511 COURSE TITLE: Architecture of Bengal		
CREDIT: 2 (2hrs/week)	TERMS OFFERED: 4 th year 1 st semester	
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course type: Core Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: From the early period to the colonial era, this course will examine Bengal's architectural history as a sociopolitical and cultural manifestation. The heterogeneity of architectural forms and practices in Bengal will be addressed through theoretical essays, critical writings, and lecture presentations that will analyze a number of concerns and values. This course will also analyze Bengal's distinct deltaic qualities and strives to provide students with a set of questions, approaches, and instruments for self-critique and criticism.

Course Content:

Study of socio-cultural, geo-climatic, historical, philosophical, religious influences and development of Bengal architecture focusing on Buddhist and Hindu art and architectural development during Mauryan, Gupta, Pala, Verman, Sen etc. era in Bengal.

Evolution of Islamic and Colonial Architecture in Bengal with various influences focusing on Sultanate, pre-Mughal, Mughal development and early European colonies e.g., Portuguese, Dutch, French, British etc. colonial development.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -	Teaching-Learning Strategy	Assessment Strategy
CO1 Explain different influences e.g., climatic, geographical, religious and social etc. on the architecture of Bengal from early period to colonial era.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO2 Compare the architectural styles and construction techniques during the periods covered.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO3 Critically analyze the construction techniques, architectural problems, practice and solutions of Bengal architecture under Buddhist, Hindu and Muslim rule.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO4 Evaluate the technical and formal architectural vocabulary of Bengal architecture from from early period to colonial era.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√					√						
CO2				√								
CO3				√								
CO4				√								

20.7.3 ARCH 4611

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 4611 COURSE TITLE: Housing		
CREDIT: 2 (2hrs/week)	TERMS OFFERED: 4 th year 1 st semester	
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course type: Core Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of this course is to understand basic theories, concepts of housing, policy, and perspective along with introducing students with housing provision, housing delivery system, housing components, space standards, housing infrastructure and other design requirements, and the fundamental concept of housing, settlement and built environment. The course will also discuss housing paradigms, special norms, sustainability issues and learning to apply in real design schemes and provide knowledge and create analytical ability to the students on housing economics.

Course Content: Housing policy and Planning; housing and community; elements of housing; their influence on individuals, societies and their environment; physical, social, economic and technical aspects of housing problems in bangladesh; legislations and regulations; housing paradigms; housing is a process rather a product.

Human settlement and housing; housing choice; built-environment; the housing provision system; housing finance and housing subsidy; housing delivery system; space standards; housing infrastructure and other design requirements; low-cost and low-income group housing; housing economics and current market scenario.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Describe housing policy and Planning, community, legislations, housing paradigms, elements of housing and its influence, housing paradigms, human settlement, housing framework, housing choice, housing economics.	Class Lecture	Final Exam/Class Test/Assignment
CO2	Explain community in housing, housing policy, elements of housing, housing paradigms, housing problems in Bangladesh, housing delivery system; urban space	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment

	standards; housing infrastructure, human settlement, housing standards, and design requirements, housing provision, delivery system.		
CO3	Evaluate housing problems in Bangladesh, housing design policies and standards for different income groups under different markets and different political regimes.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2				√		√						
CO3				√		√						

20.7.4 CE 4111

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: CE 4111 COURSE TITLE: Structure V		
CREDIT: 2 (2hrs/week)	TERMS OFFERED: 4 th year 1 st semester	
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Core Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to introduce students with the properties of reinforced concrete in civil engineering practice, enable them with different methods for design of concrete structures, and develop capacity to perform analysis and design of the reinforced concrete beams and slabs.

Course Content: Fundamentals of reinforced concrete design; working stress design method; analysis of reinforced beams by working stress design (WSD); Design of slabs, one-way and two-ways; Preliminary analysis of flat slabs, flat plated, waffle slabs, ribbed slabs; introduction to ultimate strength design (USD).

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -	Teaching-Learning Strategy	Assessment Strategy
CO1 Explain one-way slab, two-way slab, flat slab, flat plate, waffle slab, ribbed slab, basic requirements to design the structures and ultimate strength design method.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO2 Analyze singly reinforced, doubly reinforced and T-beams for flexure using working stress design method.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO3 Prepare preliminary design of beam, slab, flat slab, flat plate, waffle slab and ribbed slab.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment

CO4	Design of singly reinforced, doubly reinforced and T-beams, one way and two way slabs for flexure using working stress design method.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
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Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2				√								
CO3				√								
CO4				√								

20.7.5 ME 4511

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ME 4511 COURSE TITLE: Mechanical Equipment		
CREDIT: 2 (2hrs/week)	TERMS OFFERED: 4 th year 1 st semester	
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Core Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of this course is to provide students a clear concept of mechanical equipment along with their major applications, enable them to communicate design ideas through understanding working principles, analysis of performance, and calculation of various parameters for application, and increase their creativity to find solution for upcoming difficulties during mechanical equipment design.

Course Content: Review of basic concepts and definitions; application of air-conditioning; cooling load calculation; air-conditioning systems, air handling and distribution; design of ducts; Air-conditioning equipment;

Fire hazards; firefighting methods; vertical transportation: types of elevators; determination of size and quantity of elevators; incoming and outgoing traffic handling; escalators and moving ramps.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -	Teaching-Learning Strategy	Assessment Strategy
CO1 Explain the basic concepts of air conditioning, firefighting methods, vertical transportation, incoming and outgoing traffic handling, escalators and moving ramps.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO2 Compare different types of air conditioner, vertical transportation systems and firefighting systems.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO3 Design the cooling load, proper duct system, vertical transportation and firefighting system for households, offices, educational institutions etc.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2	√			√								
CO3				√								

20.8 4th Year 2nd Semester

20.8.1 ARCH 4122

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 4122 COURSE TITLE: Design Studio VIII		
CREDIT: 7.5 (15 hrs/week)	TERMS OFFERED: 4 th year 2 nd semester	
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course Type: Core Sessional	Pre-requisites: ARCH 4112	Co-requisites: N/A

Rationale of Course: The main objective of this is to enable students to deal with different practical housing challenges in their future practice through learning fundamental concepts and their application regarding Housing. The course will also enable students to design spaces by analyzing environmental, social, cultural, emotional and economic factors to generate housing in urban, semi- urban and rural context.

Course Content: Investigation, analysis, and design of housing/communities in urban, semi-urban or rural contexts with emphasis to community participation, specific themes and their impact on the immediate environment; projects incorporating all major housing design considerations as taught in the academic program (theory and design) and are inclusive of relevant broader planning knowledge.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -	Teaching-Learning Strategy	Assessment Strategy
CO1 Evaluate client’s housing requirements, goals, and resources to innovate contemporary design solutions.	Class lecture, study, analysis, field survey, discussion	Class Assessments/ Final Jury
CO2 Analyze historical architectural style and details with current housing design development to consider future trends.	Class lecture, study, analysis, field survey, discussion and feedback.	Class Assessments/ Final Jury
CO3 Design housing considering consumer’s need and satisfaction as well as technology, policy and standard.	Demonstration, exploratory discussion and feedback.	Class Assessments/ Final Jury
CO4 Communicate the holistic overview of housing design concepts and architectural solutions both in verbal and written form using a wide range of representational media.	Demonstration, exploratory discussion and feedback.	Class Assessments/ Final Jury

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1				√		√						
CO2							√					
CO3		√	√			√	√	√				
CO4									√	√		

20.8.2 ARCH 4222

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 4222 COURSE TITLE: Professional Training		
CREDIT: 1.5 (300 hrs)	TERMS OFFERED: 4 th year 2 nd semester	
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course type: Core Sessional	Pre-requisites: ARCH 3122	Co-requisites: N/A

Rationale of Course: The objective of this course is to provide students with the opportunity to acquire basic knowledge and skill in the practice of architecture and to familiarize with professional working environment.

Course Content: The student will work under the direct supervision of an experienced and registered architect (full member of IAB) and also the host firm or an office; Concerned teachers of that course will monitor progress and advice on relevant issues; Students will be required to complete a detailed Professional Training Record Log Book for tasks undertaken at the office; At the end of the training period, students will submit completed and duly signed Professional Training Record Log Book and the Portfolio of their major jobs done in the office/firm during training period for evolution in an oral examination where the student will be expected to demonstrate adequate professional knowledge.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -	Teaching-Learning Strategy	Assessment Strategy
CO1 Explain the duties and responsibilities of a practicing architect.	Feedback and Presentation	Viva/ Examination
CO2 Develop skills to adopt in an office environment, including project and Office management, and contract administration.	Feedback and Presentation	Viva/ Examination
CO3 Generate Design and Construction Documentation.	Feedback and Presentation	Viva/ Examination

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1											√	
CO2										√		√
CO3		√	√								√	

20.9 5th Year 1st Semester

20.9.1 ARCH 5112

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 5112 COURSE TITLE: Design Studio IX		
CREDIT: 9 (18 hrs/week)	TERMS OFFERED: 5 th year 1 st semester	
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course type: Core Sessional	Pre-requisites: ARCH 4122	Co-requisites: N/A

Rationale of Course: The main objective of this course is to educate students with complex functions including structural and building services analysis that will prepare students for leadership and other productive positions in the profession of architecture. The course will also prepare students to challenge their ability to handle a complex architectural project and to exercise a higher level of critical architectural issues in a professional manner. In addition, the course will develop the skill to produce various technical drawings for design implementation like detail working drawings and authority (RAJUK) approval drawings.

Course Content: Design task focusing on realistic problems with complex functions in a specific context, the task will include all design phases from formulation of architectural program to preparation of preliminary working drawings; specific attention will shed light on design quality in terms of formal, functional and structural aspects to attain professional level of achievement, within a given socio-economic context.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Apply professional ethical codes and practices in accordance with the standard rules and regulations	Demonstration, study, analysis, discussion.	Class Assessments/ Final Jury
CO2	Analyze complex architectural problems focusing on theoretical, technical, and programmatic issues in accordance with social, environmental, and economic processes.	Demonstration, exploratory discussion and feedback.	Class Assessments/ Final Jury
CO3	Evaluate design in terms of formal, functional and structural aspects.	Discussion and feedback.	Class Assessments/ Final Jury
CO4	Formulate a rational design solution in a specific context considering the complexity of functional programs, structure, climate, environment, society, economy, and resource efficiency and communicate it through professional presentations.	Demonstration, exploratory discussion and feedback.	Class Assessments/ Final Jury

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1								√			√	
CO2				√		√	√					
CO3		√	√						√			
CO4		√	√			√	√		√			

20.9.2 ARCH 5411

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 5411 COURSE TITLE: Architectural Conservation		
CREDIT: 2 (2hrs/week)	TERMS OFFERED: 5 th year 1 st semester	
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course type: Core Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of this course is to introduce students with architectural conservation and heritage with its context, evaluation process of the deterioration of a historic site and how to develop an integrated conservation process with contemporary techniques and tools. The course will also enable students to implement the international conservation guidelines and legislations in different historic sites focusing urban context and maintain Disaster Risk Management of cultural heritage.

Course Content: Architectural conservation- meaning, principles and scope; history and issues of conservation; defining the concept of conservation and protection process: preservation, restoration, renovation, reconstruction, adaptation at building and urban level; conservation techniques and tools; methodology of conservation; conservation in urban context of Dhaka; the beginnings of conservation in British India conservation process; manifesto for the society for the protection of ancient buildings;

Values in Conservation; tools for conservation; conservation laws and practices; authenticity; conservation issues and context; conservation policy, ethics, and regulations; ICOMOS Charters; conservation and restoration of monuments and sites; conservation of historic towns and urban areas; disaster risk management of cultural heritage; conservation practices in Bangladesh; international case study and good practices; world heritage nomination process.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Comprehend and distinguish the cultural significance in respect to socio-economic, political and environmental factors of heritage sites to gain awareness.	Class Lecture	Final Exam/Class Test
CO2	Apply contemporary tools, techniques and methodology of conservation to formulate an integrated solution and demonstrate through verbal, written and visual means.	Class Lecture and exploratory discussions	Final Exam/Class Test

CO3	Distinguish the effective conservation policy through different national and international laws and improve the critical point of view.	Class Lecture and problem solving	Final Exam/Class Test/Assignment
CO4	Analyze the sustainability of cultural heritage through disaster risk management with the knowledge of structure, material and construction of historical buildings.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2				√								
CO3				√								
CO4	√						√					

20.9.3 CE 5111

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: CE 5111 COURSE TITLE: Structure VI		
CREDIT: 2 (2hrs/week)	TERMS OFFERED: 5 th year 1 st semester	
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Core Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of this course is to introduce students the basic knowledge of column section and necessity of BNBC and ACI code for designing a structure, enable students to understand the functions and applications of beam column frame, vierendeel truss, folded plates, arches, domes, shells, shear walls and prestressed concrete, and develop skills to analyze and preliminary design of arches, domes, shells, vierendeel truss and shear walls. The course will also enable students to analyze multistoried buildings using approximate analysis under gravity and lateral loads, and design reinforced concrete columns under axial loads and bending moment, preliminary design of beam sections for prestressed concrete.

Course Content: Preliminary analysis of column sections in multistoried buildings and grids; approximate analysis; approximate analysis of multistoried buildings for gravity and lateral loads; verendeel truss, folded plates; introduction and preliminary design of arches, domes and shells; classification of shells;

Reinforced concrete column, stoky and long; prestressed concrete; introduction, analysis and preliminary design of beam sections; introduction to shear walls - preliminary design.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Explain the functions and applications of column, vierendeel truss, folded plates, arches, domes, shells, shear walls and prestressed concrete and the necessity of BNBC and ACI code for designing a structure.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO2	Calculate load and moment capacity of short columns, arches and shear walls.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO3	Analyze vierendeel truss, folded plates, arches, domes, shells, shear walls and prestressed concrete beam, multistoried buildings under gravity and lateral loads.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO4	Design of short columns, arches, domes, shells and prestressed concrete beams.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO5	Select suitable structural system among beam column frame, folded plates, vierendeel truss, arches, domes, shells and prestressed concrete.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2				√								
CO3				√								
CO4				√								
CO5				√								

20.9.4 HSS 5611

DEGREE PROGRAM: Bachelor of Architecture		
COURSE CODE: HSS 5611		
COURSE TITLE: Project Management and Accounting		
CREDIT: 2 (2hrs/week)	TERMS OFFERED: 5 th year 1 st semester	
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course type: Core Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of this course is to learn students the basic knowledge of the concepts and principles of project management and financial and managerial accounting. The course will also facilitate students with appropriate mastery to formulate and analytical techniques of project management by using various tools and enable them to evaluate an appropriate mastery of the soft skill for planning and decision making through cost and management accounting for project managements.

Course Content: Basic concepts and principles of management; development of management skills; management of organization; decision making; planning and control; basic statistics; basic operations; research; plans; bidding and subcontracting; use of operations research techniques.

Basic accounting principles; different kinds of cheque; cost accounting; elements of cost accounting for direct and indirect cost; inventory control; overhead allocation; cost sheet. break-even analysis; construction accounting; budgeting and budgetary control; standard cost-computation of cost; variances. capital budgeting- IRR, NPV, PBP.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Describe the knowledge of basic project management and financial accounting, how the right people/materials, tools and techniques are selected, expertise used and appraisal toward skilled and turned into efficient human resources for development projects.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO2	Analyze the financial decision making and account for project management, cost of a product, budgeting of projects, analyzing financial statements, depreciation techniques, and preparation of cost sheets for effective decisions.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO3	Evaluate the techniques and tools for projects and financial appraisal.	Class Lecture and discussions	Final Exam/Class Test/Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											√
CO2				√								√
CO3				√								√

20.10 5th Year 2nd Semester

20.10.1 ARCH 5122

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 5122 COURSE TITLE: Design Studio X		
CREDIT: 9 (18 hrs/week)	TERMS OFFERED: 5 th year 2 nd semester	
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course type: Core Sessional	Pre-requisites: ARCH 5112	Co-requisites: N/A

Rationale of Course: The objective of the course is to make students knowledgeable and skillful through innovative, sensible and critical thinking as well as culturally capable, socially responsible and engaged with the community and context, enable student to generate a number of design alternatives, evaluate and select the most appropriate one including detailed design response to a wide range of functional and technical challenges in a variety of settings and merge with architectural design concepts and propositions through models, drawings, diagrams, and other creative media utilizing oral, visual and written skills to a professional standard.

Course Content: Recognize feasible projects of significance as thesis projects; Preparation of complete design solution based on investigation and analysis of the physical and contextual aspects of the problem, and on the understanding of design considerations of material, structure and form; Focus will be on the objective analysis of the related factors and in transforming them into a tangible architectural solution of professionally acceptable quality.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Explain multiple theoretical, social, political, economic, cultural, and environmental contexts related to the problems and the need to act legally, ethically, and critically for the good of the client, society, and the public.	Classroom lecture, study and analysis, exploratory discussion, field survey and feedback.	Class Assessments/ Final Jury
CO2	Apply a diverse range of professional principles and skills to ponder and convey architectural ideas innovatively, sensibly and responsibly through appropriate presentation medium e.g., writing, speaking, drawing, and model making.	Demonstration, exploratory discussion and feedback.	Class Assessments/ Final Jury
CO3	Evaluate the critical principles, the scopes and limitations, and variables associated with the specific topic and characteristics of the project from a contemporary perspective.	Demonstration, exploratory discussion and feedback.	Class Assessments/ Final Jury

CO4	Produce comprehensive tangible architectural design solution with an emphasis on the spatial quality by integrating a wide range of information, physical and contextual aspects and variables of the project.	Demonstration, exploratory discussion and feedback.	Class Assessments/ Final Jury
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Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1				√								
CO2		√				√	√				√	
CO3		√	√						√			
CO4		√	√			√	√		√			

20.10.2 ARCH 5721

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 5721 COURSE TITLE: Professional Practice and Ethics		
CREDIT: 2 (2 hrs/week)	TERMS OFFERED: 5 th year 2 nd semester	
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course type: Core Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The objective of the course is to develop professionalism among the students through explaining the professional service, different rules and regulations of design involved in professional practice, and code of Professional Conduct and Ethics. The course will also provide knowledge to prepare different legal documents such as architect-client contract document, Owner-contractor contract document, construction document, bid documents etc.; demonstrate evaluation process for selecting of different co-professionals who work with an architect in practice; discuss office management and construction administration, process of submitting Expression of Interest (EOI) and Bidding; and Explore the Management principles and correspondence of professional organizations.

Course Content: The role of the Architect in the building industry and process; general conditions of owner-architect contract; architectural services: construction documents, bid documents; contract documents, evaluation process of contractors; IAB code of ethics and professional conduct;

The Architect's office; administration of construction; office management; working collaboratively; competitions; rules regulations of competition in respect with IAB and PPR; the Architect and his consultants; official correspondence; professional organizations: local and international; the regulatory system: planning and design controls, building code and approval process; management principles and practices for the range of architectural practice.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Explain the role of the Architect in the building industry and process; general conditions of owner-architect contract; architectural services: construction documents, bid documents; contract documents, evaluation process of contractors; The Architect's office; administration of construction; office management; working collaboratively; competitions; rules regulations of competition in respect with IAB and PPR.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment
CO2	Analyzing the construction documents, bid documents; contract documents, evaluation process of contractors; IAB code of ethics and professional conduct; the regulatory system: planning and design controls, building code and approval process; the Architect and his consultants; official correspondence; professional organizations: local and international; management principles and practices for the range of architectural practice.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment
CO3	Evaluate code of ethics and professionalism, building code, official correspondence, professional organizations in professional field.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1											√	√
CO2								√				√
CO3								√			√	

20.10.3 HSS 5621

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: HSS 5621 COURSE TITLE: Bangladesh Studies and Government		
CREDIT: 2 (2hrs/week)	TERMS OFFERED: 5 th year 2 nd semester	
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course type: Core Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to explain students the basic concepts of government, politics and their governance structures, characteristics, functions, constitution, and laws and major administrative systems with the nature of administrative challenges for good governance. The students will also learn the history of Bangladesh, the economy and patterns of development processes, socio-economic and governmental frameworks, governing strategies.

Course Content: Government: Basic concepts of government and politics: form and structure of government, organs of government-legislature, executive, judiciary, and theory of democracy; Socialism, bureaucracy State, government, nation and nationality etc.; Political views on government structure; cabinet form and presidential form of government; unitary form and federal form of government; main organs of government, characteristics and functions of Government and good governance; Public Administration in Bangladesh; E-government; Government and Politics of Bangladesh; Constitution and laws for Government, local government, NGOs, public law, principal, rule and policies for Administration and Government, managing development project, constitutional bodies; Local Self – Government, Central Government, Public Opinion and foreign policy of Bangladesh; Major Administrative Systems of Developed Counties;

Bangladesh Studies: Introduction to Bangladesh; Geo-political and socio-economic history of Ancient Bengal; Origin and development of Bengal Civilization from early and medieval periods to pre-Bangladesh period; Important places and sculptures; Socioeconomic and political contexts in the period of Liberation War and backgrounds of her Independence: six points demands, Agartala Conspiracy, General Election 1970, Operation searchlight; Economic development and its transformation; Economic and social inequality; Social and cultural transformation; Industrial development from the first industrial to the fourth industrial revolution; Bangladesh and its Vision 2021 and Vision 2041; Fifth year economic plan; Progress to the Sustainable Development Goals (SDGs); Bangladesh Delta Plan 2100 (BDP 2100).

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Describe the history of Bangladesh through the ancient, medieval, colonial and post-colonial periods alignment with form and structured of government	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO2	Apply how the different constitutional bodies and socio-political government organs rolling their behavior on governance and people in Bangladesh.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment

CO3	Analyze the structural features of the Bangladeshi history, economy and patterns of development processes and the nature of administrative challenges for good governance	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO4	Evaluate the different perspective in Bangladesh socioeconomic and political culture and role of government, administrative body and government management system	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2						√						
CO3	√											
CO4				√		√						

21. Description of Elective Courses

21.1 Elective Theory Courses: Set- A

Required credits of elective courses from Set A is 14 (7 courses). Students of 1st, 2nd and 3rd year will be allowed to take these courses.

21.1.1 ARCH 1821

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 1821 COURSE TITLE: Advanced Building Materials and Technologies		
CREDIT: 2.0 (2hrs/week)		
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Optional Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to develop a fundamental understanding of: the relationship of materiality to construction systems and techniques, manufacturing process of different building materials, and how a material’s modular form, dimensions and intrinsic qualities influence the design process. This course has also opportunity to study traditional construction techniques, contemporary remodeling of indigenous or vernacular materials, building components and cutting-edge construction technologies.

Course Content: Understanding the relationship of materiality to construction techniques; and how a material’s modular form, dimensions and intrinsic qualities influence the design process; preparation, manufacture, properties, uses and applications of building materials (e.g., metal, reconstructed wood, stone, plastic, rubber, fabrics etc.); traditional construction techniques and contemporary remodeling of indigenous or vernacular materials (e.g., mud, bamboo etc.).

Building components and cutting-edge construction technologies e.g., modular coordination, prefabrication and digital fabrication techniques etc.; construction techniques of special forms: arch, dome, vault, shell, plate, space frame, metal structure etc.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Describe different building materials, components, construction of special forms, digital fabrication and different construction technologies, their classification, manufacturing process, uses, preparation and method of installation, modularity, assemble process, safety and sustainability.	Class Lecture and exploratory discussion	Final Exam/Class Test/Assignment
CO2	Explain behavior, characteristics, function and application of both cutting edge and traditional materials, construction technologies, fabrication techniques and special building forms.		
CO3	Assess the properties and characteristics of both cutting edge and traditional materials, construction technologies and special forms through different mechanical tests and quality control tests.	Class Lecture and exploratory discussion	Final Exam/Class Test/Assignment
CO4	Recommend appropriate materials and design guidelines for modular construction elements, precast and prefabricated construction, digital fabrication and construction of special building forms.	Class Lecture and exploratory discussion	Final Exam/Class Test/Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2	√											
CO3				√								
CO4				√								

21.1.2 ARCH 1823

DEGREE PROGRAM: Bachelor of Architecture		
COURSE CODE: ARCH 1823		
COURSE TITLE: Aesthetics and Design		
CREDIT: 2.0 (2hrs/week)		
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Optional Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: This course facilitates students to understand and interpret the theories about aesthetics, its perception, essence and relation of it with art and design. It will also introduce students the theories of concept, systematic knowledge of developing architectural forms based on design principles. It also has the opportunity to evaluate architectural design

methods in relation to human perception and experiences and develop skills to assess the quality of architectural space and critically analyze a work of architecture and its methods of functioning.

Course Content: Introduction to the subject matter and purpose of aesthetics; aesthetics in the realm of art and design; its relation to the common people; aesthetics and the act of creation; aesthetic knowledge as a system; aesthetics as a normative science; methods of aesthetics; aesthetic activity; essence and principal forms of aesthetics; theoretical models of aesthetics; psychology of perception and creation; developments of ideas and their trends in the field of aesthetic activity; the concept and the architectural concept; types of concept; theory of criticism;

Introduction and definition of architectural design; design methods; overview of the basic elements, system and orders; theories of design related to the use of basic elements (point, line, plane, and volume); properties of form and their transformations; formal collision and articulation of form and surface; quality of architectural space; concepts of space and enclosure; relationships between solid and void; principles of spatial organization; scale and proportioning system in relation to human perception and experiences; overview of theories and application of design proportion, scale and ordering principles; circulation elements; configuration of the path; path-space relationship.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Explain about the basic perceptions of aesthetics, concepts, criticism methods, architectural design elements and principles in architecture.	Class Lecture and exploratory discussions	Final Exam/Class Test
CO2	Identify the difference between traditional and contemporary theories of aesthetic perception, values, design elements and principles.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment
CO3	Analyze concepts (logically and architecturally) and the quality of architectural spaces in relation with human perception and experience.	Class Lecture and exploratory discussions	Final Exam/Class Test
CO4	Evaluate the aesthetic values, criticism methods of architecture and architectural composition (2D and 3D) focusing architectural theories and principles.	Class Lecture and exploratory discussions	Final Exam/Class Test

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2	√											
CO3			√									
CO4		√										

21.1.3 ARCH 2813

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 2813 COURSE TITLE: Ergonomics		
CREDIT: 2.0 (2hrs/week)		
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Optional Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The aim of the course is to introduce the principles of Ergonomics and its necessity in the built environment, design techniques and real case study of a particularly designed space. It will enable students to evaluate ergonomically healthy, comfortable and safe context and their influence on architecturally designed space.

Course Content: Introduction to Ergonomics, definition and history of ergonomics; anatomy, posture and body mechanics; anthropometric principles in workspace and equipment design, activity-related soft tissue disorders, back injuries, shiftwork, organizational and psychosocial aspects of work; skilled work and mental activity and regulations in ergonomics;

Applications; heat, cold and the design of the physical environment; vision, light and lighting; hearing, sound, noise and vibration; human-machine interaction; human error and safety.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Identify the history, theory of ergonomics and its evolution over the time, the anatomy, posture, body mechanics and its relation with human's daily life activities.	Class Lecture and problem solving	Final Exam/Class Test/ Assignment
CO2	Apply skilled work, mental activity and regulations of ergonomics in real life case.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment
CO3	Analyze the anatomy, posture, body mechanics and its relation with human's daily life activities, the applications in physical environments of different physical aspects.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment
CO4	Evaluate the reasons of human error and find the solutions of a safe working and living environment.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2	√											
CO3		√					√					
CO4				√		√						

21.1.4 ARCH 2815

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 2815 COURSE TITLE: Art Appreciation		
CREDIT: 2.0 (2hrs/week)		
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Optional Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The aim of the course is to introduce the definition and boundaries of art, various forms of art, principles and elements of art. It will discuss arts in relation to other products of human activity and imagination e.g., history, literature, economics, philosophy, religion, science. It also develops skills to connect formal attributes of art with their meaning and expression by understanding historical art movements. It also has the opportunity to Explore physical tools and techniques and expressive qualities of the various media used in the making of art.

Course Content: Definition of visual art and its relationship with beauty and science; art as social phenomenon-how art plays a big role in society, immediate environment, political situations, different subjects and symbolism, historic and cultural context; the method and function of art; evolution of different art forms; branches of art; introduction to concept, perception and development of art in different context; directions; criticism and appreciation of visual art;

Understand the different media of performing art like music, poetry, theatre, film etc.; in addition, with entertainment and aesthetic value art as the expression and evaluation of social, cultural, moral, political and ideological viewpoints; meaning of performing art- history, theory and industry; the language of art, typology and characteristics of various forms of art; tools, techniques and media used to produce works of art; analysis of the work of art; theory of criticism.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Classify the appropriate vocabulary for describing the work of art and theory of criticism to appreciate the artist's intentions.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment
CO2	Understand the role and effect of the arts and art movement in societies and other cultures from different period of time.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment
CO3	Explain the processes involved in artistic production and themes (political, social, cultural and aesthetic) that artists examine in their work to recognize major works from the history of art.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment
CO4	Analyze the elements of different art and art movements as expressions of values within cultural and historical contexts.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2	√											
CO3				√								
CO4				√								

21.1.5 ARCH 2821

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 2821 COURSE TITLE: Energy Efficient Building Design		
CREDIT: 2.0 (2hrs/week)		
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Optional Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to focus on energy efficiency as an important design determinant. It enables students to design buildings for low energy use and optimal indoor air quality including ventilation, energy efficiency, moisture problems, and prevention. This course has also opportunity to Explore renewable and alternative energy sources in national and global context.

Course Content: Fundamentals of building energy use and energy conservation; passive strategies: moisture preventive measures, daylight utilization, energy saving materials and construction techniques; thermal and visual comfort and building performance; theories of energy-efficient buildings: passive houses, green buildings, net-zero buildings, low energy buildings with existing examples.

Introduction to life-cycle costing; alternative and renewable energy sources and distribution system; building performance evaluation: internationally acclaimed building certification systems (e.g., LEED/BREEAM); examples of certified buildings.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -	Teaching-Learning Strategy	Assessment Strategy
CO1 Explain the introductory approach of thermodynamics and heat transfer mechanism of building and user.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment
CO2 Analyze different types of energy efficient buildings as well as passive strategies in innovative building design projects.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment
CO3 Evaluate international building certification systems to understand building performance in terms of comfort and energy use.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2							√					
CO3							√					

21.1.6 ARCH 2823

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 2823 COURSE TITLE: Interior Design		
CREDIT: 2.0 (2hrs/week)		
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Optional Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to develop a fundamental understanding of the elements and principles of design as found in the background treatments (walls, floors, windows) for a room and interior living condition. It will enable students to Explore the design process, use of drawings, design software and presentations. It will develop skills to select and specify furniture, fixtures, equipment and finish materials in interior spaces.

Course Content: Understanding principles of interior designing and design of various interior spaces in relation to occupancy and environmental factors; introduction to interior layout, finishes, details, color schemes, furnishings and lighting of such spaces in new buildings or as part of refurbishment projects; physical and behavioral properties of materials, tools and technology of its application in the construction.

Learning functional separation of spaces and interior furniture, artificial lighting and mechanized ventilation along with comfort condition (thermal, visual, sonic, tactile); use of nonstructural materials such as false ceiling, wall paneling, floor finishes, and interior plantation; detail construction and joining material for interior space in response to contemporary issues.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Explain the elements and principles of design and their application in planning and organization considering physical, social and psychological aspects of interior environment.	Class Lecture and exploratory discussions	Final Exam/Class Test
CO2	Apply theory and abstraction to design compositions and develop the dynamic relationship between human behavior and the interior environment.	Class Lecture and exploratory discussions	Final Exam/Class Test
CO3	Analyze the technical aspects of interior design projects along with types and degrees of interior enclosure, volumetric accommodation of activities, functions, spatial scale and continuity.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment

CO4	Distinguish different types of interior materials and finishes along with cost estimation.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
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Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2			√									
CO3			√									
CO4	√											

21.1.7 ARCH 3811

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 3811 COURSE TITLE: Educational Facilities Planning and Design		
CREDIT: 2.0 (2hrs/week)		
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Optional Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: This course will provide a fundamental understanding of the educational facilities and educational institutions design; different influences; design philosophy, policies, design standards and guidelines for planning and design of educational institutions. It will develop skills to analyze the design criteria, various technical issues and plan spaces for modern educational programs/institutions.

Course Content: Evolutionary development of educational facilities; elements of education and classification of educational institutions; socio-economical, cultural and environmental aspects influencing educational facilities design; philosophy, policies, design standards and guidelines for planning and design of educational institutions.

Development/Planning of organized spaces for modern educational programs/institutions; design criteria of educational institutions; lighting, ventilation, safety and security issues; materials and techniques to educational facilities design; introducing advanced techniques; related background case studies.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

	Course Outcomes (COs): at the end of the Course, the student will be able to -	Teaching-Learning Strategy	Assessment Strategy
CO1	Describe evolutionary development of educational facilities, elements and classification of institutions, influencing factors of educational building designs, standards and guidelines for planning and case studies.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO2	Demonstrate building process, building services, skills in relevant legislation and codes for design and constructions.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment

CO3	Appraise the key design criteria, various technical and innovative issues for educational facilities design.	Class Lecture and exploratory discussions	Final Exam/Class Test
CO4	Evaluate environmentally sustainable construction techniques and materials.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2	√											
CO3			√									
CO4							√					

21.1.8 ARCH 3813

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 3813 COURSE TITLE: Fire Safety Design		
CREDIT: 2.0 (2hrs/week)		
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Optional Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: This course will provide a good understanding of fire hazards and evacuation process in the buildings. It will discuss about selection and appropriate use of firefighting equipments. It develops knowledge of National and International Fire safety legislation, standards and firefighting building code.

Course Content: Understanding the physics and chemistry of fire, development and spread of fire, action in the event of a fire, fire detection, means of raising an alarm (sprinkler system design, smoke detector and heat detector selection, schematic drawing for water supply system, etc.); means of summoning the fire brigade; means of escape and evacuation procedure (evacuation plan, egress path, staircases and corridor design for safe exit; fire extinguisher spacing and installation guideline); firefighting tools and techniques.

Overview of the fire safety legislation; Bangladesh National Building Code (BNBC) guidelines for fire safety to control the design; construction and arrangement of building components to provide a reasonably safe means of escape; international firefighting code and standards; new and efficient firefighting and fire protection systems.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Describe the physics and chemistry of fire, development and spread of fire, fire detection systems, means of summoning the fire brigade, escape and evacuation procedure, firefighting tools and techniques, national and international legislations, codes and guidelines for fire safety, protection and control.	Class Lecture and exploratory discussions	Final Exam/Class Test

CO2	Explain different components of fire detection systems, means of summoning the fire brigade, escape and evacuation procedure, firefighting tools and techniques, national and international legislations, codes and guidelines for fire safety, protection and control.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment
CO3	Evaluate national and international firefighting rules and guidelines in practice, fire detection systems, components, evacuation procedure, firefighting tools and techniques and legislation, code and guidelines for fire protection, safety and control.	Class Lecture and exploratory discussions	Final Exam/Class Test

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2					√			√				
CO3					√			√				

21.1.9 ARCH 3821

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 3821 COURSE TITLE: Vernacular Architecture and Settlements		
CREDIT: 2.0 (2hrs/week)		
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Optional Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: This course will provide a good understanding of fire hazards and evacuation process in the buildings. It will discuss about selection and appropriate use of firefighting equipment. It develops knowledge of National and International Fire safety legislation, standards and firefighting building code.

Course Content: Introduction to vernacular architecture: differences and similarities between vernacularism, regionalism, critical regionalism; Vernacular architecture in Bangladesh and outer world: traditional house forms in various regions utilizing local materials, construction technology, ancestral knowledge and considering social, cultural, economic, and religious aspects; Changes facing vernacular architecture in the contemporary context; Inspiration from vernacular architecture: lessons from pioneers.

Introduction to human settlement focusing rural settlement: morphology of rural settlement, types and patterns, chronological development; Influence of vernacularism behind rural settlement: Bangladesh and worldwide examples. Implications of vernacular aspects in contemporary architecture through examples: self-help and community-based sustainable approaches both is house forms and settlement development, preservation and regeneration in ecotourism, Future directions, and prospects.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Explain vernacular approaches with the influencing factors and the reasons behind alterations.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment
CO2	Interpret the locality through built forms and settlement pattern in a specific region.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment
CO3	Evaluate the advantages and drawbacks of implementing vernacular aspects in practical design.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2						√	√					
CO3						√	√					

21.2 Elective Theory Courses: Set- B

Required credits of elective courses from Set B is 08 (4 courses). Students of 4th, 5th year will be allowed to take these courses.

21.2.1 HSS 3621

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: HSS 3621 COURSE TITLE: Urban Economics and Urban Sociology		
CREDIT: 2.0 (2hrs/week)		
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Optional Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to introduce students the basic points of theoretical approaches of urban socio-economic development and apply them to different aspects of cities and people. It will explain the factors influencing urbanization, laws of returns governing production, urban land values, housing analysis, poverty, migration, unemployment and pollution. It will also explain the theories of social structure, organizations, urban society, developmental programs for urban and rural society.

Course Content: Subject matter of economics; relevant economics theories to urban economics; definition of urban economics- the reasons for the existence of cities; factors influencing urbanization- market demand and supply- choice of technique in production- laws of returns governing production; costs study- urbanization and planning- urban land values- land utilization pattern and planning-housing analysis-public housing with particular references- urban problem- poverty, migration, unemployment, pollution.

Definition and theories and their relevance to social set –up social structure- organization- social institutions and social change; urban society- social and economic problems- rural

society: social and economic problems. developmental programs related to urban and rural society – impact of programs on social development.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Describe general history of urban socio-economic development and apply them to different aspects of cities and to its inhabitants, the major economic and societal issues that have affected the growth and development of cities in the Bangladesh and elsewhere	Class Lecture and problem solving	Final Exam/Class Test/ Assignment
CO2	Apply logical and argumentum frameworks and theory to choose right way of living in city or in urban area.	Class Lecture and problem solving	Final Exam/Class Test/ Assignment
CO3	Analyze how the experience of living in cities differs for different groups based on their race, ethnicity, social class and level of capacity; based on social values and economic behavior of people	Class Lecture and problem solving	Final Exam/Class Test/ Assignment
CO4	Evaluate the socio-economic problems and possibilities and solve them in logical and rational views.	Class Lecture and problem solving	Final Exam/Class Test/ Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2						√						
CO3						√						
CO4						√						

21.2.2 ARCH 4811

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 4811 COURSE TITLE: Landscape Design		
CREDIT: 2.0 (2hrs/week)		
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Optional Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to principles and elements of landscape design and its necessity in the built environment. It illustrates historical references, biosphere and ecosystem, organization of outdoor spaces, site development. It also explains use of plant and materials, soils, grading drainage, site utilities.

Course Content: Introduction to principles and elements of landscape design; landscape architecture and its necessity in the built environment; historical references; biosphere and

eco-system; organization of various outdoor spaces; environment and design; site development; location and sequence of outdoor activity; circulation and linkages. Introduction to plant and materials and their uses to enrich the built environment; planting and gardening; a study of site selection, plane surveying, site development, topography, soils, grading, drainage, site utilities, landscaping, and planting.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Describe the principles and elements of landscape design; historical references, biosphere, and eco-system; topography, soils, grading, drainage, site utilities,	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO2	Demonstrate the organization of various outdoor spaces, built environment; planting, and gardening, plane surveying;	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO3	Analyze the principles and elements of landscape design; environment and design; site development; location and sequence of outdoor activity; circulation and linkages, the study of site selection, and site development.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO4	Evaluate the environment and design; site development; location and sequence of outdoor activity; circulation and linkages, and site development.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2	√											
CO3							√					
CO4						√	√					

21.2.3 ARCH 4813

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 4813 COURSE TITLE: Urban Design II		
CREDIT: 2.0 (2hrs/week)		
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Optional Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to provide an understanding of various bio-physical, historical, political-economic, and socio-cultural layers of the urban spaces and the city. It will also generate the perspectives of the roles and responsibilities of contemporary urban planning, and to be able to reflect upon planning’s past, present, and future roles. This course has the opportunity to Explore urban design policies, strategies with detailed scales of intervention.

Course Content: Problems and goals of modern urban design; understanding urban space and perceptions; activities in public and outdoor space; urban public spaces; development process in contemporary practices in worldwide context.

Designing urban space: urban realities and critique; empiricism and rationalism in urban design; development process in contemporary practices in South Asian context.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Explain the urban designer’s role, urban activities, contemporary urban transformation and context-based design development processes and issues related to it.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment
CO2	Interpret urban design policies and strategies with detailed scales of intervention.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment
CO3	Analyze complex urban environment.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2						√	√					
CO3						√	√					

21.2.4 ARCH 5811

DEGREE PROGRAM: Bachelor of Architecture		
COURSE CODE: ARCH 5811		
COURSE TITLE: Research Methodology		
CREDIT: 2.0 (2hrs/week)		
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Optional Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to provide a clear understanding of research, its process and introduce research as a tool for architectural design. It will explain analytical approach to identify research topic, formulate research questions, and adopt appropriate methods. It will also develop skills to prepare and present research outcome in both verbal and written form.

Course Content: Research and research methodologies; understanding methods such as data collection from various sources, literature review, observation, field survey, interview etc.; report writing techniques (content, abstract, introduction, body, conclusion); citation and referencing styles.

Problem identification; research topic selection; research question; hypothesis formulation; measurement scale and research design; studying research types; reviewing a research paper.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Explain research and its aim, objectives, methods, process, types and solutions for the prevailing problems.	Class Lecture and exploratory discussions	Final Exam/Class Test
CO2	Analyze research topic, research questions, and appropriate methods for complex architectural problems.	Class Lecture and exploratory discussions	Final Exam/Class Test
CO3	Evaluate research topics, methods and research outcomes.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment
CO4	Develop research question, related hypotheses and appropriate research method to test the hypotheses.	Class Lecture and exploratory discussions	Final Exam/Class Test/ Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2		√										
CO3		√		√								
CO4		√										

21.2.5 ARCH 5813

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 5813 COURSE TITLE: Industrial Building Planning and Design		
CREDIT: 2.0 (2hrs/week)		
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Optional Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to provide a clear understanding about site development, master planning, traffic assessment in industrial building design. It will also discuss about the environmental impact assessments, working condition inside industrial buildings, environmental control, machinery layout, services, security, safety measures, signage, and fire protection systems in industrial buildings. It also has the opportunity to study the rules, legislations, and codes for designing industrial buildings.

Course Content: Historical development and classification of industrial buildings; site development and master planning; traffic impact assessment, environmental impact assessment, working conditions; criteria for overall design; criteria for LEED certification, Case studies.

Machinery layout, environmental control; services; fire protection; security and safety measures; signs and symbols (signage); legislation, and codes.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Describe historical development and classification of industrial buildings; site development and master planning; traffic impact, environmental impact, working conditions; criteria for design; LEED certification, machinery layout, environmental control; services; fire safety, signage, legislation, and codes.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO2	Analyze site development and master planning; traffic impact, environmental impact, working conditions; criteria for design; LEED certification, Machinery layout, environmental control; services; fire safety, signage, legislation, and codes.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO3	Evaluate criteria for overall design, fire protection and safety measures, legislation, and codes.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2					√		√					
CO3							√					

21.2.6 ARCH 5815

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 5815 COURSE TITLE: Health Facilities Planning and Design		
CREDIT: 2.0 (2hrs/week)		
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Optional Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to understand the basic principles, science, processes and practices of Health Facility Planning. It will explain master planning principles, standards and guidelines for health facility planning.

Course Content: Approaches to health facilities planning and design; philosophy, policies and processes within comparative and historical perspective; design standards and guidelines. Fundamentals of programming; planning and design of health care facilities: health facility planning and design, master planning / campus planning, special design requirements, 5 critical Functional Planning Units (FPU); project coordination and integration of services.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Explain the basic concepts, concerns, principles, and practices in planning and designing a hospital, its utility systems, facilities, concepts of “safe hospital” and “green hospital” and the importance of their integration in the planning and design of hospitals.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO2	Analyze architectural plans in relation to hospital activities and functions.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO3	Formulate an evaluator’s checklist for the planning and design of a new hospital or expansion, modification and retrofitting of an existing one.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2		√										
CO3			√	√								

21.2.7 ARCH 5821

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 5821 COURSE TITLE: Commercial Building Planning and Design		
CREDIT: 2.0 (2hrs/week)		
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Optional Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: This course will introduce students with systematic knowledge of commercial building design and planning based on changing trends and significant issues. It will develop skills to assess the relevant design principles (e.g. structural and constructional technology, service, maintenance, safety and security) and evaluate design methods for sustainable construction materials and techniques.

Course Content: Introduction to commercial building as occupancy, building type and space articulation; changing trends and significant issues of commercial building planning and design in the history of architecture; building codes and other relevant legislations for planning and designing commercial buildings; specialized knowledge of structural and construction technology.

Design criteria for commercial buildings with case studies; natural and mechanized ventilation and lighting; safety and security to building design; service, maintenance and fire protection standards; new sustainable construction materials and techniques.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Identify the evolution of commercial building planning and design, different factors that influence commercial building designs.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO2	Demonstrate building process (structural and constructional), building services, skills in relevant legislation and codes for design and constructions.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO3	Distinguish between the key design criteria, technical and innovative changes.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO4	Evaluate environmentally sustainable construction techniques and materials.	Class Lecture, and exploratory discussions	Final Exam/Class Test/Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2	√											
CO3		√										
CO4							√					

21.2.8 ARCH 5823

DEGREE PROGRAM: Bachelor of Architecture		
COURSE CODE: ARCH 5823		
COURSE TITLE: Architectural Design for Disasters		
CREDIT: 2.0 (2hrs/week)		
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%
Course Type: Optional Theory	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to understand the basic principles, science, processes and practices of Health Facility Planning. It will explain master planning principles, standards and guidelines for health facility planning.

Course Content: Basic overview of the various types of natural, human-induced and industrial hazards and their potential for causing disasters; types of disasters: flood, cyclone, drought, earthquake, river erosion, land slide, tornado, tsunami, arsenic, salinity; general principles of disaster risk management; disaster preparedness planning, risk insurance, emergency rescue and relief needs; long-term recovery, rehabilitation and reconstruction.

History of disasters in Bangladesh; evolution of disaster management practices; institutions; community level resilience; cyclone preparedness program, methods of building safer buildings in disaster-prone areas, construction of disaster shelters and provision of post-disaster emergency housing; precedent studies on resilient building techniques from all over the world.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Describe types and cause of disasters, principles of disaster risk management, preparedness planning and management practices in Bangladesh and all over the world.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO2	Compare spectrum of hazard reduction measures, methods and techniques that can and should be employed for mitigation, preparedness, response and recovery.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO3	Analyze disaster preparedness planning, emergency rescue and relief needs, long term recovery needs, community level resilience and method of building safer buildings in Bangladesh and all over the world.	Class Lecture and exploratory discussions	Final Exam/Class Test/Assignment
CO4	Recommend adaptive settlement and build form planning for mitigation and recovery of disasters in disaster prone areas of Bangladesh.	Class Lecture, and exploratory discussions	Final Exam/Class Test/Assignment

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2				√								
CO3						√	√					
CO4						√	√					

21.3 Elective Sessional Courses: Set- A

Required credits of elective courses from Set A is 12 (8 courses). Students of 1st, 2nd and 3rd year will be allowed to take these courses.

21.3.1 ARCH 1822

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 1822 COURSE TITLE: Free Hand Drawing		
CREDIT: 1.5 (3hrs/week)		
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course type: Optional Sessional	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to introduce basics of free hand drawing skills to clarify and communicate ideas, express visual thoughts and perceptions. This course has opportunity to practice competency with a variety of drawing media, experiment with composing sketching and sighting techniques and Use drawing for understanding, analysis, creative thinking and development of design ideas with a focus on architecture.

Course Content: Introduction to the basics of free hand drawing skills to clarify and communicate ideas, express visual thoughts and perceptions; understand and use of the variety of drawing tools, techniques and subject matters; basic aspects of free hand sketching methods such as line, shape, tonal value, texture, composition and spatial dynamics; exploring a range of different rendering styles; use and scopes of different media such as pencil, charcoal, pen and ink, brush and ink, pastel etc; use of different approach to articulate geometric and free form; working on still life, human anatomy (proportion, scale, gesture and sustained drawing of the figure), architecture and landscape.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Apply different sketching methods and techniques to create compositions.	Class Lecture and demonstration	Class Assessments
CO2	Interpret the forms of natural and human-made elements and transfer this knowledge to a 2D/3D format through basic art media.	Drawing and sketching	Class Assessments
CO3	Appraise the compositions created by self and others, the forms of natural and human-made elements and transfer this knowledge to a 2D/3D format through basic art media.	Drawing, sketching and feedback	Class Assessments
CO4	Create compositions meant to communicate specific ideas.	Drawing, sketching and feedback	Class Assessments

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1									√			
CO2		√							√			
CO3		√							√			
CO4		√							√			

21.3.2 ARCH 1824

DEGREE PROGRAM: Bachelor of Architecture		
COURSE CODE: ARCH 1824		
COURSE TITLE: Photography and Graphic Reproduction		
CREDIT: 1.5 (3hrs/week)		
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course type: Optional Sessional	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is orient students with photography, its elements, compositions and importance of photography in architectural study and documentation. This course has the opportunity to explore tools and techniques of photography. It will develop skills required for architectural photography, photo manipulations, graphics layouts and digital photo printing.

Course Content: Introduction to photography, its elements and compositions of it; importance of photography in architectural study and documentation; understanding photography’s relationship to the built-environment; tools and techniques: parts and operations of camera, types of camera, lenses and films; architectural photography: typical exercises starting with bracketing, depth of field, etc. and continuing in photography of buildings, panorama; understanding exposure; basic instruction about computer manipulated photo prints: create, design and manipulate complex graphics layouts to prepare it for digital printing.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Describe basic elements, general composition rules and aesthetic aspects of photography, the relationship of built environment with photography and technological features of camera and digital printing.	Class Lecture, demonstration, photo walk, exercise and feedback	Class Assessments
CO2	Apply various tools and techniques of photography and digital printing.	Class Lecture, demonstration, photo walk, exercise and feedback	Class Assessments
CO3	Develop photographs and complex graphic layouts for digital printing.	Class Lecture, demonstration, photo walk, exercise and feedback	Class Assessments

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2		√			√				√			
CO3		√			√				√			

21.3.3 ARCH 2812

DEGREE PROGRAM: Bachelor of Architecture		
COURSE CODE: ARCH 2812		
COURSE TITLE: Computer Applications II		
CREDIT: 1.5 (3 hrs/week)		
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course type: Optional Sessional	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is orient students with basic principles and techniques of making 3D virtual model to communicate design. This course has opportunity to explore softwares for Computer Aided Drawings (CAD). It also enables students to develop soft skills for rendering and animation software to produce hyper realistic models, rendering, animations of both interior and exterior spaces.

Course Content: Introduction to the software for Computer Aided Drawings (CAD), 3D Modeling, hyper realistic rendering; understand the basic principles and techniques of making 3D virtual models to communicate design; application of rendering and animation software to produce hyper realistic models, rendering, animations of both interior and exterior spaces.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Create two- dimensional architectural Computer Aided Drawings using appropriate software in order to communicate the design intent to a third-party.	Demonstration, exploratory discussions and experiments.	Class Assessments and Presentation
CO2	Develop complex 3D architectural form using modelling software.	Demonstration, discussions and experiments.	Class Assessments and Presentation
CO3	Produce complex 3D architectural form, lighting condition and material mapping in simulated environment using rendering software for architectural 3D model making.	Demonstration, discussions and experiments.	Class Assessments and Presentation

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1					√				√			
CO2					√				√			
CO3		√			√				√			

21.3.4 ARCH 2814

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 2814 COURSE TITLE: Sculpture		
CREDIT: 1.5 (3 hrs/week)		
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course type: Optional Sessional	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to study and analyze three-dimensional artistic forms and expressions for sculpting exercise. This course will develop skills in sculpting with different techniques and media.

Course Content: Study and analysis of three-dimensional aspects of different artistic forms and expressions; various techniques in sculpting; exercise based on the use of different types of materials: plastic material. mixed media: metal, wood, fabric etc.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Demonstrate the three-dimensional aspects of different artistic forms and expressions.	Demonstration, exploratory discussion and feedback.	Class Assessments/ Final Presentation
CO2	Apply the skills of sculpting to design and diversify different types of sculpture.	Demonstration, exploratory discussion, model making and feedback.	Class Assessments/ Final Presentation
CO3	Evaluate the knowledge of various sculpting techniques.	Demonstration, exploratory discussion, model making and feedback.	Class Assessments/ Final Presentation

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2		√										
CO3		√										

21.3.5 ARCH 2822

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 2822 COURSE TITLE: Graphic Art		
CREDIT: 1.5 (3 hrs/week)		
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course type: Optional Sessional	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to show competency in critical visual literacy. This course will demonstrate the basic core skills, professional practices and life skills fundamental to the field of graphic art and design. It will enable students to apply knowledge, skills, and processes specific to graphic art and design to communicate visually in the manner of a graphic artist and designer.

Course Content: Basic skills, processes and knowledge involved in graphic art and design; developing foundational abilities such as drawing; understanding various media; working with principles and elements of art and design, and image manipulation; exercises including designing and producing successful promotional pieces, publications, and digital art, as well as creating an original layout for a newsletter, catalog, logos, and brochures, developing art and design products; creative problem solving and design techniques to represent an idea, concept, or design philosophy, typography, photography, illustration, and computer-generated images; introduction to various methods of reproduction; work compiling, portfolio preparation, and interactive presentation strategies.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Exhibit a thoughtful application of the elements and principles of visual design, color theory, information hierarchy, and typography to successfully communicate narratives, concepts, emotions, and/or identities across a variety of media.	Demonstration, exploratory discussion and feedback.	Class Assessments/ Final Presentation
CO2	Employ relevant applications of tools and technology in the creation, reproduction, and distribution of visual messages.	Demonstration, hands on exercises and feedback.	Class Assessments/ Final Presentation
CO3	Create effective print and digital communications and user experiences through the application of theories, tools, and best practices in the field.	Demonstration, hands on exercises and feedback.	Class Assessments/ Final Presentation

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1		√							√			
CO2					√				√			
CO3		√			√				√			

21.3.6 ARCH 2824

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 2824 COURSE TITLE: Computer Application III		
CREDIT: 1.5 (3 hrs/week)		
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course type: Optional Sessional	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to understand the relationship between architectural forms and spaces by exploring animation softwares, understand videography as a tool for research and enable students to use additional softwares to develop a complete professional videography or animation project.

Course Content: Introduction to computer generated animation using widely used 3D animation software to explore forms of architecture and spaces in architecture; exploring video as a tool to analyze, survey, evaluation and research; project exercises on videography using tools like video and still digital camera, sound recording and input device, video input device, video and sound editing software, and output device.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Explain the tools and techniques of generating 3D animation and videography to analyze, survey, evaluate and present any architectural design or research project.	Classroom lecture, study and analysis, exploratory discussion and feedback.	Class Assessments/ Final Presentation
CO2	Generate animation using cutting edge softwares to express architectural forms and spaces.	Demonstration, hands on exercises and feedback.	Class Assessments/ Final Presentation
CO3	Produce complete professional videos or animations to analyze and present architectural projects or research, using tools like video and still digital camera, sound recording and input device, video input device, video and sound editing software, and output device.	Demonstration, hands on exercises and feedback.	Class Assessments/ Final Presentation

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1					√				√			
CO2		√			√				√			
CO3		√			√				√			

21.3.7 ARCH 3812

DEGREE PROGRAM: Bachelor of Architecture		
COURSE CODE: ARCH 3812		
COURSE TITLE: Climatology Lab		
CREDIT: 1.5 (3 hrs/week)		
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course type: Optional Sessional	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The aim of this course is to help students appreciate the practical application of theoretical concepts through lab exercises. Students will work with instruments to measure climatic parameters, and transfer climatic raw data into easily usable format for architectural design.

Course Content: There will be workshops on basic understanding of climatology; laboratory works will include experiments, workbook exercises as well as first-hand data collection, compilation, and analysis; hands-on, practical experience with instrumentation to measure temperature, precipitation, humidity, wind speed, radiation, illuminance etc.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Demonstrate the practical application of the theoretical concepts related to climate and built environment design.	Classroom lecture, study and analysis, discussion.	Class Assessments and Presentation
CO2	Measure different climatic data using instruments (e.g., anemometer, thermometer, lux meter, sound level meter etc.)	Demonstration, field survey and feedback.	Class Assessments and Presentation
CO3	Express achieved climatic data into an applicable format for architectural design.	Classroom lecture, study and analysis, exploratory discussion and feedback	Class Assessments and Presentation

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1							√		√			
CO2				√	√					√		
CO3				√	√				√			

21.3.8 ARCH 3822

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 3822 COURSE TITLE: Working Drawing II		
CREDIT: 1.5 (3 hrs/week)		
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course type: Optional Sessional	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The aim of this course is to develop skills to produce drawings and details through understanding of codes, by- laws and other regulations. It includes modular building elements (i.e., wall, floor, roof, door, window, stair, elevators and escalators) and spaces (i.e., kitchen and toilets). It enables students to prepare complete construction documents and RAJUK drawing booklet.

Course Content: Working drawing of building interior, industrial building, different types of products.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Develop skills to produce the working drawings and details of different building types through understanding of codes, by- laws and other regulations.	Demonstration, architectural drafting, exploratory discussion and feedback.	Class Assessments/Final Presentation

CO2	Produce detailed architectural working drawings of individual building components (i.e., wall, floor, roof, door, window, stair, elevators and escalators) and spaces (i.e., kitchen and toilets).	Demonstration, architectural drafting, exploratory discussion and feedback.	Class Assessments/Final Presentation
CO3	Prepare complete construction documents and RAJUK drawing booklet.	Demonstration, architectural drafting, exploratory discussion and feedback.	Class Assessments/Final Presentation

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1			√									
CO2			√						√			
CO3			√						√		√	

21.3.9 ARCH 3824

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 3824 COURSE TITLE: Product Design		
CREDIT: 1.5 (3 hrs/week)		
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course type: Optional Sessional	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The aim of this course is to develop skills to provide students the basic knowledge of product design with the understanding of conceptual and technical development issues. It will equip students to solve complex functional requirements emphasizing on innovative concept, necessity and quality of product, manufacturer and consumers demand. It also has the opportunity to experiment with visual properties of materials, manufacturing mechanisms, technical supports in a particular contextual and environmental implications.

Course Content: Understanding the designer’s role and users’ perspective; real life needs and solutions; sketching, model making and prototyping techniques and computer-aided design; product innovation, creation, and a mediator between the manufacturer and consumer; experimenting of visual properties of materials, manufacturing mechanisms, technical supports in a particular contextual and environmental implications.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

	Course Outcomes (COs): at the end of the Course, the student will be able to -	Teaching-Learning Strategy	Assessment Strategy
CO1	Distinguish information and data related to a particular product and perceive designer’s role and users’ perspective.	Classroom lecture, study and analysis, exploratory discussion and feedback.	Class Assessments/ Final Presentation
CO2	Experiment with visual properties of materials, manufacturing mechanisms,	Demonstration, exploratory discussion	Class Assessments/

	technical supports in a particular contextual and environmental implications.	and feedback.	Final Presentation
CO3	Evaluate the real life needs and solutions through sketching, model making, prototyping techniques and computer-aided design.	Demonstration, exploratory discussion and feedback.	Class Assessments/ Final Presentation
CO4	Design a product from conceptualization to materiality.	Demonstration, exploratory discussion and feedback.	Class Assessments/ Final Presentation

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1				√		√						
CO2		√	√				√					
CO3		√	√			√	√					
CO4			√									

21.3.10 CE 3012

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: CE 3012 COURSE TITLE: Building Materials and Construction Workshop		
CREDIT: 1.5 (3 hrs/week)		
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course Type: Optional Sessional	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to provide students the clear understanding of different materials and test methods (Laboratory and field) of various building construction materials. It will also acquaint students with construction techniques, methods, site supervision and its planning process.

Course Content: Practical recognition of different building construction materials; simple tests for building construction materials; study and site visits to acquaint with construction techniques and site supervision.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Analyze materials properties, qualities, construction processes and resources of construction i.e. human, material, equipment, and financial resources.	Classroom lecture, study and analysis, exploratory discussion, question answer session, demonstration, field survey (Optional) and feedback.	Class Assessments, Final Presentation
CO2	Choose appropriate building materials and current industry methods for construction.		
CO3	Develop skills to collaborate with design professionals and other stakeholders within the multidisciplinary construction team.		

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1				√								
CO2				√	√							
CO3									√	√		√

21.3.11 HSS 2612

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: HSS 2611 COURSE TITLE: English Language Lab		
CREDIT: 1.5 (3 hrs/week)		
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course Type: Optional Sessional	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: This course is designed to improve student's communicative competence that they will apply in their core courses as well as later in their career development. It will further enhance their proficiency in reading, grammar, vocabulary, writing and listening.

Course Content: Reading skills: Skimming, scanning, predicting, inferring; analysis and interpretation of texts, comprehension from literary and non-literary texts.

Writing skills: Current approaches to writing; process and product; different phases in process writing; techniques of writing; writing paragraph and essay; report: types, structure, preparatory steps to writing reports, elements of style, use of illustrations, writing the report.

Listening skills: Listening to recorded texts, learning to take useful notes and answering questions; introducing various types of listening techniques; and top-down and bottom up listening process.

Speaking skills: Dialogue in peer work, participation in discussion and debate, extempore speech, narrative events, storytelling; presentation: preparing the presentation, performing the presentation.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -	Teaching-Learning Strategy	Assessment Strategy
CO1 Develop technical and academic writing skills following current approaches to writing.	Classroom lecture, study and analysis.	Class Assessments/ Final Presentation
CO2 Analyze contextualized reading materials to reformulate information using formal and analytical language.	Classroom lecture, study and analysis, exploratory discussion and feedback.	Class Assessments/ Final Presentation
CO3 Develop speaking skills by practicing conversation with different techniques both individually and as part of a team.	Classroom lecture, practicing in group, exploratory discussion, and feedback.	Class Assessments/ Final Presentation
CO4 Analyze contextualized listening texts to provide necessary information and	Classroom lecture, practicing via audio,	Class Assessments/

	data.	exploratory discussion, and feedback.	Final Presentation
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Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√								√			
CO2	√								√			
CO3	√								√	√		
CO4	√								√			

21.4 Elective Sessional Courses: Set- B

Required credits of elective courses from Set B is 8 (6 courses). Students of 4th, 5th year will be allowed to take these courses.

21.4.1 ARCH 4812

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 4812 COURSE TITLE: Architectural Field Survey		
CREDIT: 1.5 (3 hrs/week)		
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course Type: Optional Sessional	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to introduce students with the methods of architectural field survey for a design or research project. It will develop skills to record or identify architectural styles and communicate the elements of sites and buildings using appropriate vocabulary.

Course Content: Learning the methods and process for conducting field surveys for architects; resource identification, terminology, description, photography, sketching, research and evaluation as integral components of the learning experience; focusing on all aspects of the survey and evaluation process and the use of survey results by various entities; understanding the knowledge by training through lectures, required readings, discussions, research and fieldwork

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -	Teaching-Learning Strategy	Assessment Strategy
CO1 Explain the practical application of the theoretical concepts related to field survey in the assigned site.	Class lecture, study, analysis, discussion, field survey and feedback.	Class Assessments/ Final Presentation
CO2 Choose appropriate surveying instruments to correctly operate the survey considering climate, built environment and historic preservation.	Demonstration, discussion, field survey and feedback.	Class Assessments/ Final Presentation
CO3 Discover architectural details and solve practical problems within sites.	Demonstration, discussion, field survey and feedback.	Class Assessments/ Final Presentation

CO4	Interpret accurate architectural drawings such as site plans, elevations and sections after field survey.	Demonstration, discussion and feedback.	Class Assessments/ Final Presentation
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Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1				√								
CO2						√				√		
CO3						√						
CO4				√					√			

21.4.2 ARCH 4814

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 4814 COURSE TITLE: Digital Fabrication		
CREDIT: 1.5 (3 hrs/week)		
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course Type: Optional Sessional	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to demonstrate students on how turn digital concepts into real objects utilizing Model Workshops' equipment and machinery with rapid prototyping equipments such as laser cutters, 3D printers, and CNC routers; and share the fundamentals of designing objects with CAD software. The students will learn the possibilities and constraints of producing both precisely specified functional parts and algorithmically derived experimental designs; and be able to apply the knowledge, skills, and processes specific to Digital Fabrication to communicate critically with the technology and architecture.

Course Content: Introduction to digital modeling and digital fabrication principles; use of laser cutters, 3D printers, CNC routers etc. for computer-aided design (CAD) and digital production; options and resources accessible in the Model Workshops for designing and creating items, parts, artifacts, artworks, building components, architectural model making etc.; fundamentals of using CAD software to create precise, functioning parts for creating kinetic sculptures, robots, and mechanical components, model making for a variety of creative endeavors focusing in the field of architecture; algorithmic design; project to Explore the possibilities of the digital and physical tools discussed throughout the course.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

	Course Outcomes (COs): at the end of the Course, the student will be able to -	Teaching-Learning Strategy	Assessment Strategy
CO1	Explain the designing and fabricating architecture and its components and evaluate the potential and limitations of digital tools in the field of Architecture	Classroom lecture, study and analysis, exploratory discussion, demonstration and feedback.	Class Assessments/ Final Presentation
CO2	Apply advanced modeling software and hardware to conceive and create designs	Demonstration, hands on	Class Assessments/ Final Presentation

	that are difficult to do using traditional methods.	exercises, exploratory discussion and feedback.	
CO3	Demonstrate a good knowledge of the use of digital tools and acquired a 'digital craft' specifically applied to the field of Architecture	Demonstration, hands on exercises, exploratory discussion and feedback.	Class Assessments/ Final Presentation
CO4	Synthesize multidisciplinary knowledge to have hands-on experience to fabricate different building components, experience of integrating digital and traditional techniques in the production of a portfolio and communicating effectively by means of digital skills.	Demonstration, hands on exercises, exploratory discussion and feedback.	Class Assessments/ Final Presentation

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1				√								
CO2					√							
CO3		√			√				√			
CO4		√			√				√			

21.4.3 ARCH 4822

DEGREE PROGRAM: Bachelor of Architecture		
COURSE CODE: ARCH 4822		
COURSE TITLE: Climatic Design, Modeling and Simulation		
CREDIT: 1.5 (3 hrs/week)		
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course Type: Optional Sessional	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of this course is to give students a good understanding of parameters influencing the indoor climate and energy performance of buildings, develop skills in building energy modelling and simulation, and make them understand the advantages and weaknesses of different simulation tools.

Course Content: Major steps in the development of visual models, and how they are used for decision-making, with a particular emphasis on climatic variables; analyzing, modeling as well as solving complex systems under multiple constraints; methods for interpreting and visualizing simulated and measured indoor climate and energy performance of buildings.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Demonstrate the system studies of the thermal properties of buildings, air movements, humidity controls and daylight inclusion in buildings.	Demonstration, analysis, discussion, hands-on experiments, and data collection.	Class Assessments/ Final Presentation
CO2	Apply simulation techniques to measure building performance varying different parameters.	Demonstration, experiments and analysis, exploratory discussion, hands-on experiments, and data collection.	Class Assessments/ Final Presentation
CO3	Evaluate the simulation results to select optimum solutions and configurations amongst competing designs.	Class lecture, demonstration, analysis, discussion, hands-on experiments, and data collection.	Class Assessments/ Final Presentation

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1				√								
CO2				√	√							
CO3			√	√			√		√			

21.4.5 ARCH 4824

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 4824 COURSE TITLE: Interior Design Studio		
CREDIT: 1.5 (3 hrs/week)		
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course Type: Optional Sessional	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The objective of the course is to provide students with a clear understanding of ergonomics of interior spaces, introducing them with basic design elements required for interior design and Orient with advanced electro-mechanical equipment that are being used for contemporary interior spaces. This course will also enable students to design an interior space using the latest finish materials knowing their detailed specification and orient them with interior construction techniques and working drawings. (Joining, finishing, etc.).

Course Content: Preparation of interior design drawings for different types of spaces such as office, studio, bank, restaurant, club and shop; detailed specifications of finish materials for floor, ceiling and wall. natural and artificial lighting and ventilation; fixed and movable furniture, decorative element, upholstery, drapery, art work, interior plantation, fountain, automation device.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Design an interior space aesthetically and pragmatically.	Demonstration, exploratory discussion, field survey (Optional) and feedback.	Class Assessments/ Final Presentation
CO2	Facilitate an interior space with contemporary electro-mechanical equipment.	Demonstration, exploratory discussion, field survey (Optional) and feedback.	Class Assessments/ Final Presentation
CO3	Choose accurate interior construction material according to the demand of the space and functions.	Demonstration, exploratory discussion, field survey (Optional) and feedback.	Class Assessments/ Final Presentation
CO4	Produce working drawings to construct an interior design fully.	Demonstration, exploratory discussion, field survey (Optional) and feedback.	Class Assessments/ Final Presentation

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1		√							√			
CO2		√	√									
CO3		√	√									
CO4		√	√						√			

21.4.6 ARCH 4826

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 4826 COURSE TITLE: Landscape Design Studio		
CREDIT: 1.5 (3 hrs/week)		
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course Type: Optional Sessional	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to develop a more complex and nuanced understanding of what constitutes landscape, and the role of landscape architects in envisioning and creating new landscapes, Explore creative processes of idea generation and spatial requirements of various common landscape functions focusing on the context, and demonstrate landscape design issues and solutions through architectural drawings, visualization providing a holistic overview of the design concepts.

Course Content: Design through interactive processes integrating considerations of principles and elements, site development, location and sequence of activities for the

landscape design process; knowledge and skills acquired in this course provide a fundamental basis of their understanding of landscape design which shapes their future practice.

Study of natural and man-made landscape elements; site analysis; landscape graphics; drawings and reports on indoor and outdoor elements and environments; site planning and program development; application of the principles and techniques of landscape design through design exercises; design of utility, maintenance and services focusing location and sequence of indoor and outdoor activity, circulation and linkages, planting and gardening.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Identify data about a specific site in the development of a design response, with particular attention to topography, landscape character, users, sensory information and climate.	Demonstration, study and analysis, exploratory discussion, field survey (Optional) and feedback.	Class Assessments/ Final Presentation
CO2	Apply fundamental design principles e.g., primary elements, composition of form and space, proportion and scale, ordering principles.	Demonstration, study and analysis, exploratory discussion and feedback.	Class Assessments/ Final Presentation
CO3	Design productively in a studio environment and, in turn, develop interpersonal skills, verbal communication skills through small group activities and formative studio exercises.	Demonstration, study and analysis, exploratory discussion and feedback.	Class Assessments/ Final Presentation
CO4	Communicate critical design thinking according to disciplinary conventions; drawings, models and graphics.	Demonstration, study and analysis, exploratory discussion and feedback.	Class Assessments/ Final Presentation

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1						√	√					
CO2		√										
CO3			√			√	√		√			
CO4					√				√			

21.4.7 ARCH 4828

DEGREE PROGRAM: Bachelor of Architecture		
COURSE CODE: ARCH 4828		
COURSE TITLE: Building Information Modelling in Architectural Practice		
CREDIT: 1.5 (3 hrs/week)		
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course Type: Optional Sessional	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of this course is to introduce the students with Building Information Modelling (BIM) Technology, develop student’s ability to solve architectural problems through the use of BIM technology, provide knowledge of contemporary issues and critical aspects of BIM implementation in a practice or in a firm, and develop student’s consciousness and critique behaviors towards BIM uses.

Course Content: Introduction to Building Information Modeling (BIM); discussions of the roles and impacts of BIM in the architectural design; construction engineering, and management; revit architecture; creating sets, building elements, structural systems, and MEP systems; BIM and construction cost estimating and scheduling; future of Building Information Modeling.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Explain critical aspects, consciousness and critique behaviors towards BIM implementation in educational and practical field of architecture.	Classroom lecture, study and analysis, exploratory discussion, demonstration.	Class Assessments
CO2	Design different components, systems or processes to meet desired needs or intents and solve architectural problems through the use of BIM technology.	Classroom demonstration, hands-on exercises and feedback.	Class Assessments/ Final Presentation
CO3	Prepare detail scheduling and the construction cost through BIM.	Classroom demonstration, hands-on exercises and feedback.	Class Assessments/ Final Presentation

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√								√			
CO2		√	√		√				√			
CO3		√	√		√				√		√	

21.4.8 ARCH 5812

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 5812 COURSE TITLE: Seminar		
CREDIT: 1.5 (3 hrs/week)		
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course Type: Optional Sessional	Pre-requisites: ARCH 4122	Co-requisites: N/A

Rationale of Course: The main objective of this course is to introduce methodical approaches towards innovative research projects for the final design studio, interpret methods and techniques for systematic investigation of issues associated with the built environment, demonstrate academic writing strategies and presentation style, and enable students selecting suitable projects according to their potential and field of interest for upcoming design studio.

Course Content: Research-driven study and presentation on topics and issues associated with architecture and the built environment; selection and presentation of research focused on a particular real-life practical project with emphasis on the development of program and conceptual basis supported by interrelated case studies and literature review; accentuating on the legit, functional, formal, and structural aspect of a case the process is relied upon to result in design proposals for final year thesis projects.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Understand practical research scopes in the field of architecture and identify individual research interests.	Classroom lecture, study and analysis, exploratory discussion.	Assignments
CO2	Articulate literary and physical research to prepare a fundamental base for design considerations and interpret into verbal, written and digital presentation forms.	field survey and feedback, literature study, demonstration.	Assignments and presentation
CO3	Propose a detailed program for innovative practical or hypothetical projects to conduct final year thesis.	Visual and verbal presentation, question answer session.	Final Presentation

Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√			√								
CO2				√					√			
CO3		√	√						√			

21.4.9 ARCH 5814

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 5814 COURSE TITLE: Visual Methods in Planning and Development		
CREDIT: 1.5 (3 hrs/week)		
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course Type: Optional Sessional	Pre-requisites: N/A	Co-requisites: N/A

Rationale of Course: The main objective of the course is to share knowledge to the students required at different stages of assessment process to determine the needs and problems of a community, and enable students to employ knowledge into planning, design and implementation stages. The course will also assist students to demonstrate the evaluation of project results that occurs at the end of a project and involves determining whether a project’s goal and objectives are achieved which leads to the identification of additional or persisting problems allowing the cycle to begin again.

Course Content: Introduction to cartography, graphical presentation, photo documentation, and the application of geographic information systems (GIS) as employed in mapping, planning, policy, management and development; visual explanations provided by computer and by-hand applications; lecture and laboratory works with a methodological training relying on spatial analysis; students will study topography, building typology, and the development of urban infrastructure; strong emphasis will be placed upon how buildings have affected spatial development and transformation of buildings and spaces, etc.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -		Teaching-Learning Strategy	Assessment Strategy
CO1	Identify the elements and principles of visual design and their applications in the planning process.	Classroom lecture, study and analysis, exploratory discussion, demonstration, field survey (Optional) and feedback.	Class Assessments/ Final Presentation
CO2	Employ theory and different techniques in visual methods to develop dynamic relationship.	Demonstration, exploratory discussion and feedback.	Class Assessments/ Final Presentation
CO3	Analyze the visual material as a powerful component to traditional and textual data, as well as a site of investigation in its own right.	Demonstration, exploratory discussion and feedback.	Class Assessments/ Final Presentation
CO4	Appraise the application of basic rules of space planning and practical guidance for visual data collection, analysis and dissemination, which includes such techniques as working with various visual props, image analysis, annotated drawings, photo-elicitation.	Demonstration, exploratory discussion and feedback.	Class Assessments/ Final Presentation

CO5	Demonstrate different types of graphical presentation, photo documentation to communicate visually.	Demonstration, exploratory discussion and feedback.	Class Assessments/Final Presentation
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Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	√											
CO2			√									
CO3			√									
CO4					√		√					
CO5					√				√			

21.4.10 ARCH 5822

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 5822 COURSE TITLE: Dissertation		
CREDIT: 1.5 (3 hrs/week)		
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%
Course Type: Optional Sessional	Pre-requisites: N/A	Co-requisites: ARCH-5122

Rationale of Course: The objective of the course is to introduce students the academic writing styles and techniques, demonstrate them the methodical approaches towards innovative research projects for the thesis, encourage them to read relevant scientific papers and journals to explore more and to find references to justify their thoughts and enable them to record a complete written documentation of individual projects for future references.

Course Content: Written report to support Thesis or Project work; contents to vary accordingly, to complement ARCH 5122: Design Studio X; the report should entail formulation of synopsis including objectives, scope of work, methodology of work, investigation of the topic using an analysis of existing literature, case studies and other data sources culminating in broad functional requirements; it should produce informed and scientific conclusions from the design research done in Design Studio X.

Mapping Course Outcomes (COs) with the Teaching-Learning and Assessment Strategy

Course Outcomes (COs): at the end of the Course, the student will be able to -	Teaching-Learning Strategy	Assessment Strategy
CO1 Formulate research topic, research questions, aims, objectives and appropriate methods for complex architectural problems.	Study, analysis, exploratory discussion and feedback	Class Assessments /Final Presentation
CO2 Prepare literature synthesis on a coherent issue from a wide range of research papers, journals, and books.	Study, analysis, exploratory discussion and feedback	Class Assessments /Final Presentation

CO3	Develop skills in producing annotated notes, bibliographies, and tracking publication sources, lineages in academic thought and proficiency on how to present large bodies of academic writings in a systematic way.	Study, analysis, exploratory discussion and feedback	Class Assessments /Final Presentation
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Mapping of Course Outcomes (COs) to Program Outcomes (POs):

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1			√	√								
CO2				√							√	
CO3			√	√	√				√		√	

Appendices

Appendix-1: About the University

Location

The University has 25-acre campus area and is located along BIDC road in Gazipur District, which is 40 km north of Dhaka. Gazipur town is well-connected by road and railway track with Dhaka and other cities of Bangladesh. The Gazipur city can be reached from the capital by bus or train in about 2 hours. Public bus service is also available from DUET main gate.

Campus

DUET, Gazipur has a compact campus with a library, auditorium, residential halls, central mosque and residential accommodation for teachers and employees. Bank and post office are also located in the campus.

Climate

Bangladesh generally enjoys a subtropical climate. The three prominent seasons are winter, summer and monsoon. The warmest days in Dhaka region are between April and June with temperature ranging from 25 °C to 37 °C. Winter temperatures usually vary between 10 °C to 20 °C.

Accommodation

The University believes that campus life is an important aspect in the development process of students. In addition to providing services in assisting students for solving their problems that are affecting their studies, the University aims at creating an environment conducive to the promotion of interaction between faculty and student.

Accommodation is available on campus for about 70% of the student. The University has six halls of residence for accommodation of the students. The total capacity of these halls is around 2500. The halls are named after the national heroes, poets and eminent personalities of the world. The names of halls are listed below.

1. Kazi Nazrul Islam Hall
2. Shahid Muktijoddha Hall
3. Dr. Qudrat-E-Khuda Hall
4. Dr. Fazlur Rahman Khan Hall
5. Madam Curie Hall
6. Shahid Tajuddin Ahmed Hall

Non-residential students are also to be attached with a hall, so that administrative control on students becomes hall based. Two to four students have to share a room depending upon the size of the room with common shower and toilet. All rooms are furnished and well-ventilated. All residential halls are equipped with modern recreational facilities like cable TV, common room, prayer room, reading room and library.

Fooding and Stationeries

Each residential hall has its own cafeteria, which serves two meals per day. Each cafeteria is maintained by each hall authority. Students are also involved for their daily menu. Special menus are provided for different occasions in the hall cafeteria. One annual colorful dinner is also arranged in each hall in honor of outgoing students. Head of the Institute, all Departmental Heads, Provosts, Assistant Provosts and many other faculty members are

invited to enjoy dinner. Besides, this residential hall cafeteria, a big central canteen offers breakfast meals and snacks. Moreover, in Gazipur town, there are number of nice restaurants which serve a wide variety of food including oriental and western flavor. A Departmental Store is also housed in the campus for the benefit of all.

Sports and Entertainment

The physical education center provides different sports facilities to the students to acquire physical fitness indispensable for healthy mind and body. University has a beautiful playground for football, cricket, badminton, volleyball etc. Central indoor and outdoor sports competitions are arranged annually by physical education section. The University also organizes annual cultural programs on some special events like celebration of different national days. Besides, a number of cultural and social groups are also active in the campus.

Library

The University devotes considerable effort and resources to the development of outstanding library collections to meet the expanding need of teaching and research and to serve as a resource reference centre. The library has over 36,000 books, significant number of journals, thesis, dissertation, magazines, newspapers and reports. Besides these, with the membership of a consortium it has on-line access to many international research journals. Library service includes reading, lending, reference, and photocopying and document delivery service. The library is computerized and most of the information available on the internet. It is open from 8 A.M. to 8 P.M. except for certain official holidays. Besides, the general library system each academic discipline maintains rental library from which students can borrow textbooks at a nominal rate for the whole semester. In order to meet the demand of the day, the library has opened up Bangabandhu corner (collection about liberation war) in it.

Computer and Information Technology Facilities

Computing gets its utmost priority at DUET. All Departments, offices and residential area are interconnected through LAN of fiber-optic backbone. The university is now enjoying the high-speed Internet connection along with Wi-Fi networks. Central e-mail server and web server are dedicated for maintaining electronic communication inside as well as outside the university. This rich computing environment facilitates learning, teaching, research, and administrative purposes. Campus wide fiber-optical cables network has already been established.

For meaningful contribution to the national development in the field of Information Technology (IT), DUET has established a director office named Office of the Director (Computer Centre). The Computer Center has the following aims and objectives:

- i. To design and maintain the development of IT infrastructure in the campus.
- ii. To provide conducive environment for computing to facilitate learning and research activities.
- iii. To develop human resources in IT sector and arrange various training programs for the students and staff.
- iv. To pursue advanced research actively in IT in order to develop knowledge-based products and services.
- v. To establish joint collaboration with the reputed organizations in IT sector and to provide their certification programs.

Medical Centre

The University has a well-equipped medical center with a number of medical officers and supporting staffs within prescribed limits. Medical center is situated at ground floor of the central library building. Director (Students' Welfare) and Chief Medical Officer give the valuable advice for the development and improvement of medical center as well as healthcare services in this university.

The university medical center provides different healthcare facilities to the residential and nonresidential students and staffs to meet physical and mental fitness. Students are given free outpatient prescription with necessary medicines at the expense of the university. Teachers, Officers, Employees are given only free prescription and disease related valuable advice about various kinds of diseases in the medical center. All kinds of minor operations are performed under local anesthesia in the medical center. Medical center also arranges annual blood donation and vaccination programs. Students are given general knowledge about primary health-care system, preventive and social medicine. Only complicated surgical and medical emergency patients are referred urgently to the district Sadar Hospital, Gazipur and Dhaka medical college Hospital for investigations and better treatment. The university medical center does not however to bear the cost of treating injuries occurred outside the university.

Transportation

For the convenience of the students, faculties, officers and staffs DUET, Gazipur operates its own shuttle Bus Service between Dhaka city and the campus. In weekends special services are also provided for meeting the weekend recreational and other needs.

Students' Welfare

The Director of Students' Welfare is responsible for the various activities related to the physical, social, cultural and other aspects of welfare of the students. These include arrangement of supervision for halls of residence, programs for physical education, games and sports, cultural weeks and other activities of the students through the central student's union and the students' unions of the various halls of residence.

Central Students' Union

The purpose of the Central Students' Union is to promote the interests and welfare of the student body and to promote awareness of the healthy atmosphere on the university campus. The students' union also helps to provide an opportunity for everyone to mix with fellow students from different parts of the country and appreciate their cultures. All full-time students are members of the Central Students' Union, and are entitled to vote in the election of the unions governing body.

The Students' Unions of the various hall of residence also arrange their individual socio-cultural activities, literary competitions etc. and help the hall management to run the halls smoothly.

Administration

University Administration is mostly defined and determined by the University Act (Dhaka University of Engineering & Technology, Gazipur Act, 2003). According to the University Act Syndicate is the supreme authority in supervising and controlling all the activities of the University and major policy making, approving recommendations of all subordinate bodies. It also exercises its common controlling power through the Vice-Chancellor by formulating and implementing Act, Statutes, Rules and Regulations of the University.

The Finance committee, Planning and development committee, Selection committee and other statutory bodies and committees assist the Syndicate by recommending rules and regulations and other decisions as per need of the University.

The Academic Council is the supreme authority for matters relating to Education and Research. It exercises its common controlling power by formulating Academic Rules and Regulations and controlling all Academic activities and Research through Faculties, Departments, Academic committees, CASR (Committee for Advanced Studies and Research), committee relating to discipline etc. It also recommends necessary Rules and Regulations (Proposed) before the Syndicate for final approval.

Vice-Chancellor is the Chief Executive Officer (CEO) for both Academic and Administrative purposes. He is responsible for all of his activities to the Chancellor (Honorable President, People's Republic of Bangladesh). According to University Act, Vice-Chancellor is the Chairman of Syndicate, Academic Council, Finance Committee, Planning and Development Committee and all Selection Boards. He exercises his common controlling power over all the Faculties, Departments, Directorates, Offices, Halls and different Sections through Deans, Head of Departments, Directors, Head of Offices (Registrar, Controller of Examinations, Comptroller, Chief Medical Officer, Chief Engineer, and Librarian etc.), Hall provosts and other Heads of different Sections.

Registrar is the residential Officer of the University. He is the custodian of all records, common seal and assets or property as the Syndicate may commit to his charge. He is the Secretary of the Syndicate and Member Secretary of the Academic Council. He is also the member of the Finance committee. He is mainly responsible for implementing the decisions, made by the Syndicate, Academic Council and Vice-chancellor himself and decision taken from the recommendation of different bodies and committees. Major Human Resource Management (HRM) functions (Manpower acquisition, Training and Development, Placement, Motivation etc.) are performed by the Establishment Section. Student's Enrolment, Registration, all Academic activities, programs and Schedules are prepared and published by the Academic Section of the Registrar Office. Registrar is also responsible for the security matters of the University. Generally, Vice-Chancellor practices his common controlling power over all the Departments, Offices and Sections through Registrar Office.

Appendix-2: Academic Ordinance for Undergraduate Studies (Approves by the Syndicate on the recommendation of the Academic Council)

1. Definitions

- 1.1 'University' means the Dhaka University of Engineering & Technology, Gazipur abbreviated as DUET, Gazipur.
- 1.2 'Syndicate' means the Syndicate of the University.
- 1.3 'Academic Council' means the Academic Council of the University.
- 1.4 'Chancellor' means the Chancellor of the University.
- 1.5 'Vice-Chancellor' means the Vice-Chancellor of the University.
- 1.6 'Pro-Vice Chancellor' means the Pro-Vice Chancellor of the University.
- 1.7 'Dean' means the Dean of the faculty of the University.
- 1.8 'Head of the Department' means the Head of a Department of the University.
- 1.9 'Registrar' means the Registrar of the University.
- 1.10 'Academic Committee' means the Academic Committee for Undergraduate Studies (ACUG) of the degree-awarding Department of the University.

- 1.11 'Degree' means the degree of Bachelor of Science in a particular discipline of Engineering / Bachelor of Architecture offered by the University.
- 1.12 'Departmental Monitoring Committee' means the Committee for upgrading/changing the Undergraduate Curriculum and the Course system and monitoring the teacher-student activities.
- 1.13 'Degree Equivalence Committee' means the committee for equivalencing different degrees obtained from home and/or abroad.
- 1.14 'Teacher' means Professor, Associate Professor, Assistant Professor, Lecturer, and any other person approved as a teacher by the University.
- 1.15 'Student' means Student who has been admitted into the regular academic curriculum of the University.

2. Faculties

The University shall have the following Faculties:

- i. Faculty of Civil Engineering is comprised of
 - a. Department of Civil Engineering
 - b. Department of Architecture
 - c. Institute of Water and Environment
 - d. Center for Climate Change and Sustainability Research
- ii. Faculty of Electrical and Electronic Engineering is comprised of
 - a. Department of Electrical and Electronic Engineering
 - b. Department of Computer Science and Engineering
 - c. Institute of Information and Communication Technology
- iii. Faculty of Mechanical Engineering is comprised of
 - a. Department of Mechanical Engineering
 - b. Department of Textile Engineering
 - c. Department of Industrial and Production Engineering
 - d. Department of Chemical and Food Engineering
 - e. Department of Materials and Metallurgical Engineering
 - f. Institute of Energy Engineering
- iv. Faculty of Science is comprised of
 - a. Department of Chemistry
 - b. Department of Mathematics
 - c. Department of Physics
 - d. Department of Humanities and Social Sciences
- v. Any other Faculty of be instituted by the Syndicate on the recommendation of the Academic Council from time to time.

3. Departments

The University shall have the following Departments:

3.1 Degree-Awarding Departments

- i. Department of Civil Engineering
- ii. Department of Electrical and Electronic Engineering
- iii. Department of Mechanical Engineering

- iv. Department of Computer Science and Engineering
- v. Department of Textile Engineering
- vi. Department of Architecture
- vii. Department of Industrial and Production Engineering
- viii. Department of Chemical and Food Engineering
- ix. Department of Materials and Metallurgical Engineering
- x. Any other Department to be instituted by the Syndicate on the recommendation of the Academic Council from time to time.

3.2 Teaching Departments

- i. Department of Civil Engineering
- ii. Department of Electrical and Electronic Engineering
- iii. Department of Mechanical Engineering
- iv. Department of Computer Science and Engineering
- v. Department of Textile Engineering
- vi. Department of Architecture
- vii. Department of Industrial and Production Engineering
- viii. Department of Chemical and Food Engineering
- ix. Department of Materials and Metallurgical Engineering
- x. Department of Chemistry
- xi. Department of Mathematics
- xii. Department of Physics
- xiii. Department of Humanities and Social Sciences
- xiv. Any other Department that may be instituted by the Syndicate on the recommendation of the Academic Council from time to time.

4. Degrees Offered

The University shall offer courses leading to the award of the following degrees:

- i. Bachelor of Science in Civil Engineering abbreviated as B. Sc. Engineering (Civil)
- ii. Bachelor of Science in Electrical and Electronic Engineering abbreviated as B. Sc. Engineering (Electrical and Electronic)
- iii. Bachelor of Science in Mechanical Engineering abbreviated as B. Sc. Engineering (Mechanical)
- iv. Bachelor of Science in Computer Science and Engineering abbreviated as B. Sc. Engineering (Computer Science and Engineering)
- v. Bachelor of Science in Textile Engineering abbreviated as B. Sc. Engineering (Textile)
- vi. Bachelor of Architecture abbreviated as B. Arch
- vii. Bachelor of Science in Industrial and Production Engineering abbreviated as B. Sc. Engineering (Industrial and Production).
- viii. Bachelor of Science in Chemical and Food Engineering abbreviated as B. Sc. Engineering (Chemical and Food)
- ix. Bachelor of Science in Materials and Metallurgical Engineering abbreviated as B. Sc. Engineering (Materials and Metallurgical)
- x. Any other degree that may be awarded by a Department with the approval of the syndicate on the recommendation of the Academic Council from time to time.

5. Student Admission

- 5.1 The four academic years of study for the degree of B.Sc. Engineering and five academic years of study for the degree of Bachelor of Architecture shall be designated as first year class, second year class, third year class, fourth year class and fifth year class (B. Arch only) in succeeding higher levels of study. Each academic year comprises two semesters, i.e., 1st and 2nd semester. Students shall generally be admitted into the 1st year 2nd semester class. The 1st semester of 1st year class is exempted because of the candidates' completion of minimum 4-years Diploma in Engineering/Architecture backgrounds after 10 years of schooling.
- 5.2 An admission Committee shall be formed in each academic session by the Academic Council for admission into 1st year B. Sc. Engg. /B. Arch Program.
- 5.3 A candidate for admission into the 1st year class must have passed the minimum 4-years Diploma in Engineering/Architecture examination from Bangladesh Technical Education Board (after 10 years of schooling) or any examination recognized as equivalent there to and must also fulfill all other requirements as may be prescribed by the admission committee. In case of confusion regarding the equivalence the case may be referred to the Degree Equivalence Committee. However, a candidate must fulfill the requirements mentioned below:

Sl. No.	Name of the Department	Entry Requirements
1.	Civil Engineering	Diploma in Engineering (Civil/Surveying/ Environmental with special optional subjects/ Civil with wood specialization/ Construction Technology)
2.	Electrical and Electronic Engineering	Diploma in Engineering (Electrical/ Electronics/ Instrumentation and Process control/ Telecommunication/ Electro-medical technology)
3.	Mechanical Engineering	Diploma in Engineering (Mechanical/ Power/ Refrigeration and Air Conditioning/ Mechatronics/Ship Building/Marine/ Mining and Mine Survey technology)
4.	Computer Science and Engineering	Diploma in Engineering (Computer Science and Technology/ Computer/ Electronics/ Data Telecommunication and Networking/ Graphics Design/ Printing Technology)
5.	Textile Engineering	Diploma in Engineering (Textile/ Jute/ Garments and Pattern Making Technology)
6.	Architecture	Diploma in Engineering (Architecture/ Architecture and Interior Design Technology)
7.	Industrial Production Engineering	Diploma in Engineering (Mechanical/ Instrumentation and Process Control/ Automobile/ Mechatronics Technology)
8.	Chemical and Food Engineering	Diploma in Agriculture (Food/ Chemical/ Mechanical/ Power/ Refrigeration and Air Conditioning/ Instrumentation and Process Control Technology)
9.	Materials and Metallurgical Engineering	Diploma in Engineering (Power/ Refrigeration and Air Conditioning/ Automobile/ Ceramic/ Glass/ Ship Building/ Mining and Mine Survey Technology.

- 5.4 The rules and conditions for admission into various Departments shall be framed by the Academic Council on the recommendation of the Admission Committee in each year.
- 5.5 All candidates for admission into B. Sc. Engineering/ B. Arch programs must be citizens of Bangladesh unless the candidature is against the seats those are reserved for foreign students. Candidates for all seats except the reserved ones, if any, shall be selected on the basis of merit. The rules for admission into the reserved seats shall be framed by the Academic Council on the recommendation of the Admission Committee.
- 5.6 No student shall ordinarily be admitted into 1st year after the start of the corresponding classes. The date of commencement of classes for the newly admitted students will be announced in advance.
- 5.7 Prior to admission to the University every student shall be examined by a competent medical officer as prescribed in the admission rules.
- 5.8 Admission of a newly admitted student in the 1st year class will be cancelled if he/she remains absent without prior permission from the University authority for ten working days after the start of class. If any student fails to report due to unavoidable circumstances within the stipulated period, he/she may appeal within the next twenty working days to the Academic Council through the concerned Head of the Department. The decision of the Academic Council will be final.

6. Method of Course Offering and Instruction

The undergraduate curricula of the University are based on course system. The salient features of the course system are as follows:

- i. Generally, number of regular theoretical courses taken by a student will not exceed five in each semester,
- ii. Continuous evaluation of student's performance,
- iii. Evaluation by using Letter Grades and Grade Points,
- iv. Introduction of some additional optional courses and thus enable students to select courses according to his/her interest as far as possible,
- v. Opportunity for students to choose fewer or more courses than the normal course load depending on his/her capabilities and needs,
- vi. The flexibility to allow the student to progress at his/her own pace depending on his/her ability or convenience, subject to the regulations on credit and minimum grade point average (GPA) requirements, and
- vii. Promotion of teacher-student contact.

In the curriculum for the undergraduate programs, besides the professional courses pertaining to each discipline, there is a strong emphasis on acquiring a thorough knowledge in basic sciences of mathematics, physics and chemistry and subjects in humanities and social sciences. Emphasis has been given on introducing courses dealing with professional practices, project planning and management, socio-economic and environmental aspects of development projects, communicative skills etc. This will help the students to interact more positively with the society.

7. Academic Calendar

- 7.1 The academic year shall ordinarily be divided into two regular semesters each having duration of ordinarily not less than 13 teaching weeks* (65 working days) of classes.
- 7.2 There shall be final examinations at the end of each semester and the examination will be conducted as per academic regulations.
- 7.3 The registrar office will announce the academic schedule for each semester ordinarily before the start of the class on the approval of the Academic Council.
- 7.4 Academic Calendar may be prepared according to the following guidelines:

Two alternatives are provided: (i) based on two regular semesters with a provision of a review examination in each semester and (ii) based on two regular semesters and with a provision of a short semester about 8-week duration during one academic year whenever possible.

ALTERNATIVE: I

Semester-I	No. of Weeks 23
Classes	13*
Mid Semester Break	1
Regular and Review examination including preparatory leave**	6.4***
Publication of results	2.3***
Inter-semester recess and preparation for next semester	1
Semester-II	No. of Weeks 23
Classes	13*
Mid Semester Break	1
Regular and Review examination including preparatory leave**	6.4***
Publication of results	2.3***
Inter-session break and vacations throughout the session	05
Total =	52

* 14 weeks have been implemented on session 2020-2021.

** There shall be at least one examination date in a week.

***The digit after the decimal indicates number of days.

ALTERNATIVE: II

Semester-I	No. of Weeks 21
Classes	13*
Regular examination including preparatory leave **	5.4***
Publication of results	2.3***
Inter-semester recess and preparation for next semester	1
Semester-II	No. of Weeks 21
Classes	13*
Regular examination including preparatory leave**	5.4***
Publication of results	2.3***
Inter-session break and vacations throughout the session, including one 8-week Short Semester.	09
Total =	52

* 14 weeks have been implemented from session 2020-2021.

** There shall be at least one examination date in a week.

*** The digit after the decimal indicates number of days.

8. Duration of Programme and Course Structure

- 8.1 The B. Sc. Engineering programs shall extend over a period of four academic years and the B. Arch programs shall extend over a period of five academic years, each with a normal duration of one calendar year. Each academic year is divided into two semesters (except the 1st year) for the purpose of academic program and conduct of examinations.
- 8.2 The curricula of the B. Sc. Engineering/ B. Arch degree in different Departments shall be as proposed by the respective ACUG and approved by the Academic Council on the recommendation of the Executive Committee of the concerned Faculty.
- 8.3 The ACUG may review the curricula once in every academic year and put forward suggestions to the Academic Council through the Executive Committee of the respective Faculty.
- 8.4 The courses are reckoned in credits and the credits allocated to various courses will be determined by the ACUG with the following guidelines:

	Nature of Course	Contact Hour	Credit
i)	Theory/Lecture*	1.0 hour/week	1.0
ii)	Sessional/ Lab	3.0 hours/week	1.5
iii)	Sessional/ Lab	6.0 hours/week	3.0
iv)	Sessional/Design Studio		
	1 st Year and 2 nd Year	12.0 hours/week	6.0
	3 rd Year and 4 th Year	15.0 hours/week	10.0
	5 th Year	15.0 hours/week	12.0

*1.0 Contact hour means a class with a period of 50 minutes (60 minutes have been implemented from session 2020-2021).

- 8.5 The minimum credit hours for the award of bachelor's degree in engineering/ architecture will be decided by the respective ACUG and approved by the Academic Council on the recommendation of the Executive Committee of the Faculty. For the Bachelor degree in Architecture a student must earn a minimum of 194 credits (of which 20.5 credits are exempted).
- 8.6 The total number of credits for which a student should register shall be from 15 to 24 credits in a semester except the review course. However, a student may be allowed to register for less than 15 credits in a semester if
- he/she is considered academically weak,
 - number of credits required for graduation is less than 15 in that semester,
 - student cannot find appropriate courses for registration subject to the approval of the adviser.
- 8.7 The total contact hours for students including lecture, tutorial and lab/sessional should be around 30 periods per week, each period being of 50 minutes duration (60 minutes have been implemented from session 2020-2021).
- 8.8 In each degree-awarding Department, one of the Assistant Professors or above nominated by the Head of the Department for one Academic year will act as Course Coordinator as well as Member Secretary of ACUG.
- 8.9 A course plan showing details of lectures for each course, approved by the Head of the Department is to be announced at the start of each semester.

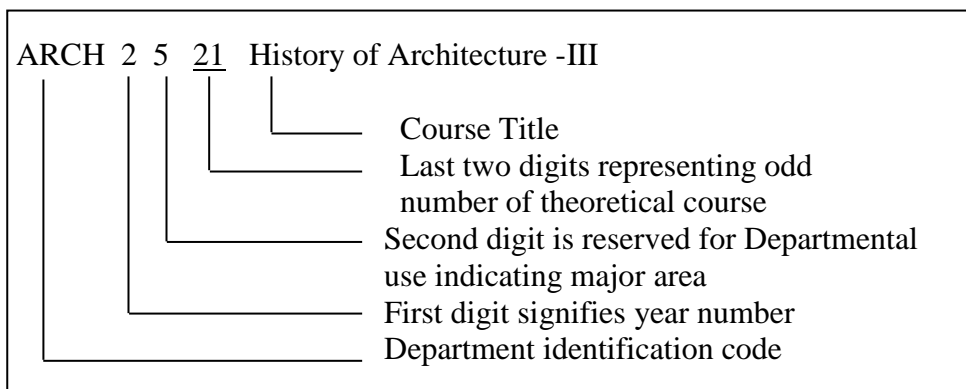
9. Course Designation and Numbering System

Each course is designated by a two to four letter word identifying course offering Department followed by a four-digit number with the following criteria:

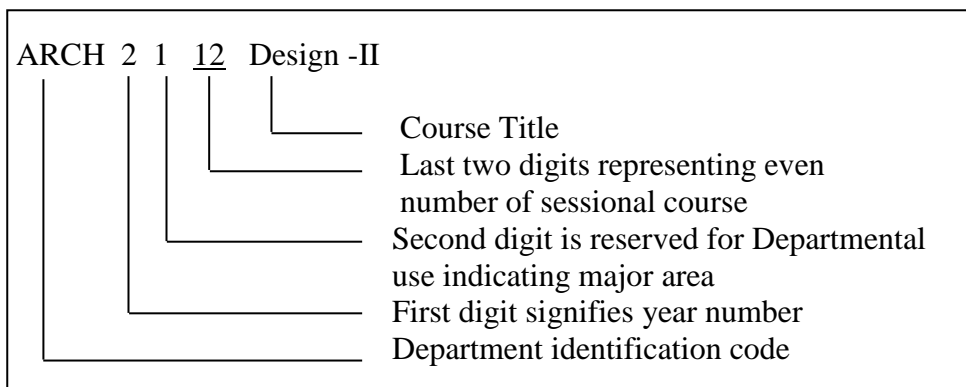
- a. The first digit will correspond to the year in which the course is normally taken by the students.
- b. The second digit will be reserved for Departmental use.
- c. The last two digits will usually be odd for theoretical and even for laboratory or sessional courses.

The course designation system is illustrated by two examples as shown below:

Example 1:



Example 2:



10. Types of Courses

The courses included in undergraduate curricula are divided into several groups as follows:

10.1 Core Courses.

In each discipline a number of courses will be identified as core courses which form the nucleus of the respective bachelor's degree program. A student has to complete all of the designated core courses for his discipline.

10.2 Pre-requisite Courses

Some of the core courses are identified as pre-requisite courses. A pre-requisite course is one, which is required to be completed before some other course(s) can be taken. Any such course, on which one or more subsequent courses build up, may be offered in each of the two regular semesters.

10.3 Optional Courses

Apart from the core courses, students will have to complete a number of courses which are optional in nature. In that case students will have some choice to choose the required number of courses from a specified group/number of courses.

10.4 Non-Credit Courses

Noncredit course(s) may be offered to a student to improve his/her knowledge in some specific fields. The credits in these courses will not be counted towards GPA and Cumulative GPA calculation but will be reflected in the transcript as satisfactory (S)/unsatisfactory (U). Noncredit course(s) may be offered under the following circumstances:

If a student's Thesis/Project supervisor feels that the study/design is highly related to course(s) offered by any other Department for its students, he can recommend to the concerned Head of the Department for participation of the student(s) in the course(s). Such registration of course(s) will not affect the normal course registration of the student.

11. Departmental Monitoring Committee and Student Adviser

11.1 Departmental Monitoring Committee

Consistent with its resilient policy to keep pace with new development in the field of Engineering and Technology, the university will update its course curricula at frequent intervals. Such updating aims not only to include the expanding frontiers of knowledge in the various fields but also to accommodate the changing social, industrial and professional needs of the country. This can be done through deletion and modification of some of the current courses and also through the introduction of new ones.

ACUG of each Department will constitute a Departmental monitoring Committee with three senior teachers of the Department as members and Head of the Department as chairman. This committee will monitor and evaluate the effectiveness of the Course System within the Department. In addition to other teachers of the Department, the committee may also propose from time to time to the ACUG any changes and modifications needed for upgrading the Undergraduate Curricula and the Course System.

11.2 Students' Adviser

One adviser will be assigned for a batch of students by the Head of the Department who will advise each student on the courses to be taken by the student. The adviser will discuss with the student his academic program and then decide the number and nature of courses for which he/she can register. However, it is the student's responsibility to keep contact with his/her adviser who will review and eventually approve the student's specific plan of study and check on subsequent progress. The adviser should generally be of the rank of an Assistant Professor or above from the concerned Department. However, in case of shortage of teachers, lecturer may also act as adviser.

For a student of second and subsequent semesters, the number and nature of courses for which he/she can register will be decided on the basis of his/her academic performance during the previous semester. The adviser will advise the students to register for the courses during the next semester within the framework of the guidelines in respect of minimum/maximum credit hour limits. The Adviser is also authorized to permit the student to drop one or more courses based on his academic performance. Special provisions exist for academically weak students with regard to make-up courses.

11.3 Teacher Student Contact

The proposed system encourages students to come in Closed contact with teachers. For promotion of teacher-student contact, each student is assigned to an Advisor and the student is free to discuss with his/her advisor all academic matters, especially those related to courses taken and classes being attended by him/her. Students are also encouraged to meet other teachers any time for help on academic matters.

12. Course Registration and its Procedures

Any student who wants to study a course is required to register formally. The course registration should be done through online portal where following steps will be maintained during registration:

- i. A student (both resident/attached) has to register his/her courses through online UGR portal. Therefore, he/she needs to create a user account in the portal with a valid e-mail address.
- ii. The student can deposit his/her fees through both online and offline. In case of offline, student has to collect and fill-up a deposit slip to pay the registration fees in the bank.
- iii. The student (both resident/attached) has to clear all dues related to hall and the hall provost will approve the student in online portal.
- iv. The student has to submit a printed copy of online registration form and the deposit slip (if paid offline) to his/her adviser.
- v. The adviser and the Head of the Department will approve the registration in online portal.
- vi. Finally, the academic section of registrar office will approve the registration in online portal. All the registration documents shall be preserved in the respective Department/office for future reference.

12.1 Credit Limit in a Semester

A student must be enrolled for the requisite number of credits as mentioned in article 8.6. A student must enroll for the prescribed sessional/laboratory courses in the respective semester within the allowed credit limits.

12.2 Pre-condition for Registration

A student will be allowed to register those courses subject to the capacity constraints and satisfactory completion of pre-requisite courses. If a student fails in a pre-requisite course in any semester, the concerned Department monitoring committee may allow him/her to register for a course which builds on the pre-requisite course provided his/her attendance and grades in continuous assessment in the said pre-requisite course are found to be satisfactory.

Registration will be done within the first ten working days of each semester. Late registration is, however, permitted under special circumstances within next five working days on payment of late registration fee as decided by the authority. Students having outstanding dues to the University or a hall of residence shall not be permitted to register. All students have, therefore, to clear their dues prior to complete the course registration procedure.

12.3 Course Adjustment Procedure

A student would have some limited options to add or replace courses from his/her registration list, within the first ten working days from the beginning of the semester. Dropping of a

course is allowed within twenty working days from the beginning of the semester. Adjustment of initially registered courses in any semester can be done by duly completing the Course Adjustment Form. These forms will normally be available in the academic section. Any student willing to add, replace or drop courses will have to fill up a Course Adjustment Form in consultation with his/her adviser. The original copy of the Course Adjustment Form will be submitted to the academic section, and then the requisite number of copies will be made by the academic section for distribution among the concerned adviser, Head, student and controller of examination.

Any changes in courses must be approved by the Adviser and the concerned Head of the Department. The Course Adjustment Form will have to be submitted to the academic section after duly filled in and signed by the persons concerned.

12.4 Withdrawal from a Semester

If a student is unable to complete the semester Final Examination due to illness, accident or any other valid reason etc., he/she may apply to the Registrar through the Head of the Department for total withdrawal from the semester within five working days after the end of the semester final examination. However, he/she may choose not to withdraw any laboratory/sessional course if the grade obtained in such a course is 'D' or higher and he/she has to indicate that clearly in the withdrawal application. The withdrawal application must be supported by a medical certificate from the University Medical Officer. The Academic Council will take the final decision about such application.

13. Striking off the Names and Readmission

- 13.1 The names of the students shall be struck off and removed from the student list on the following grounds:
 - i. Non-payment of University fees and dues within the prescribed period.
 - ii. Forced to discontinue his/her studies under disciplinary rules.
 - iii. Withdrawal of names from the University on grounds acceptable to the Vice-Chancellor of the University after having cleared all dues.
 - iv. Failure to earn the required credits for graduation as outlined in the respective curriculum and/or fulfill the Cumulative GPA requirements within the maximum allowed time of 7 academic years for B.Sc. in Engineering and 8 academic years for Bachelor of Architecture including any period of punishment. On valid medical grounds, the period may be extended by the approval of Academic Council.
- 13.2 In case a student whose name has been struck off the student list under clause (i) of Article 13.1 seeks re-admission within the session in which his/her name was struck off, he/she shall be re-admitted on payment of all the arrear fees and dues. But if he/she seeks re-admission in any subsequent session, the procedure for his/her re-admission will be the same as described under Article 13.3.
- 13.3 Every student whose name has been struck off the student list by exercise of the clause (ii) of Article 13.1 seeking readmission after expiry of the period for which he/she was forced to discontinue his/her studies, shall submit an application to the Head of the Department in the prescribed form before the commencement of the session to which he/she seeks re-admission. The Head of the Department shall forward the application to the Vice-Chancellor of the

University with his remarks. In case the re-admission is allowed, the student will be required of payment of all dues to get him/herself admitted not later than one week from the date of permission given by the Vice-Chancellor. All re-admissions should preferably be completed before the session starts. The percentage of attendance of the readmitted students shall be counted from the date of re-admission.

- 13.4 The application of a student for readmission will only be considered if he/she applies within two academic sessions from the semester of discontinuity in his/her studies in the University. Other than debarment as punishment under ordinance of the University relating to discipline, a student of any kind failing for any other reason whatsoever to become a candidate for a semester final examination in which he/she ought to have had in the usual process of his/her progressive academic activities, shall be considered to have discontinued his/her studies for the relevant semester together with striking the name off from current student list and two such discontinuous periods will be considered equivalent to that for one academic session. The maximum period of discontinuity under no circumstances is to exceed two academic sessions during a student's period of studies for the degree.
- 13.5 No student who has withdrawn his/her name under clauses (iii) and (iv) of Article 13.1 shall be given re-admission.
- 13.6 In case any application for re-admission is rejected, the student may appeal to the Academic Council for re-consideration. The decision of the Academic Council shall be final.

14. Grading System, Calculation of GPA and Cumulative GPA, and Conversion of Marks

14.1 Grading System

The letter grade system shall be used to assess the performance of the student and shall be as follows:

Numerical Grade	Letter Grade	Grade Point
80% or above	A+ (A Plus)	4.00
75% to less than 80%	A (A Regular)	3.75
70% to less than 75%	A- (A Minus)	3.50
65% to less than 70%	B+ (B Plus)	3.25
60% to less than 65%	B (B Regular)	3.00
55% to less than 60%	B- (B Minus)	2.75
50% to less than 55%	C+ (C Plus)	2.50
45% to less than 50%	C (C Regular)	2.25
40% to less than 45%	D	2.00
Less than 40%	F	0.00

A grade 'X' shall be awarded for courses (like project and thesis, design, etc.) in the odd semester, which continue through to the even semester.

14.2 Calculation of GPA and Cumulative GPA

Grade Point Average (GPA) is the weighted average of the grade points obtained in all the courses passed/completed by a student in a semester. F grades will not be counted towards GPA calculation. GPA of a semester will be calculated as follows:

$$GPA = \frac{\sum_{i=1}^n C_i G_i}{\sum_{i=1}^n C_i}$$

where n is the total number of courses passed by the student, Ci is the number of credits allotted to a particular course i, and Gi is the grade point corresponding to the grade awarded for i-th course.

The overall or Cumulative GPA gives the cumulative performance of the student from first semester up to any other semester to which it refers and is computed by dividing the total grade points ($\sum C_i G_i$) accumulated up to the date by the total credit hours ($\sum C_i$).

Both GPA and Cumulative GPA will be rounded off to the second place of decimal for reporting.

Suppose a student has completed five courses in a semester and obtained the following grades:

Course	Credits	Grade	Grade points
ARCH 3511	2	A plus	4.0
CE 3111	2	B regular	3.0
EEE 3121	2	A regular	3.75
ARCH 3112	10	B plus	3.25
ARCH 3312	1.5	A minus	3.5

Then his/her GPA for the Then semester will be computed as follows:

$$GPA = \frac{2(4.0) + 2(3.0) + 2(3.75) + 10(3.25) + 1.5(3.5)}{2 + 2 + 2 + 10 + 1.5} = 3.39$$

14.3 Conversion of Grade into Marks

- a) Marks = 79 + 84 (X - 3.75); 3.75 ≤ X ≤ 4
 - b) Marks = 44 + 20 (X - 2); 2.2 ≤ X ≤ 3.75
- Where X = Grade (Cumulative GPA) obtained by a student

15. Distribution of Marks

15.1 The distribution of marks for a given course will be as follows

(a) **Theory Courses:**

- i) Continuous Assessment
 - Class participation and attendance 10%
 - Class Tests/spot tests/Assignments 20%
- ii) Semester Final Examination (3 hours duration) 70%

Total = 100%

(b) Sessional Courses/Lab/Design Studio/Thesis	
Class participation and attendance	10%
Final Presentation/Jury/Quiz/Viva Voce	40%
Internal assessment/Criticism/Reports	50%

Total = 100%

15.2 It is desirable that weightage on continuous assessment as described in Article 15.1 such as class tests, class participation and attendance and spot test should be increased up to 50% and weightage on semester final examination should be reduced to about 50% gradually.

15.3 Basis for distribution of marks in class participation and attendance will be as follows:

<i>Attendance</i>	<i>Percentage of Marks</i>
90% or above	10%
85% to less than 90%	9%
80% to less than 85%	8%
75% to less than 80%	7%
70% to less than 75%	6%
65% to less than 70%	5%
60% to less than 65%	4%
Less than 60%	0%

15.4 The students whose average percentage of attendance will fall short of 70% in any of the theory, design studio/lab/sessional/field work courses for which he/she has registered in one academic year shall not be eligible to sit in the exam/jury and will not be eligible for the award of any type of scholarship/stipend/grant for the following academic session.

16. Class Tests, Quizzes and Spot Tests

- i. For all theory courses 3 best out of 4 class tests may be taken for awarding marks. These may be considered as the minimum recommended number of class tests for any course. If the number of class tests administered in a course exceeds these suggested minimum numbers, then two-thirds best of all may be considered.
- ii. Duration of a class test should not exceed 15-20 minutes and materials covered should be what were taught in 2 to 4 immediate previous classes or most recent classes.
- iii. For convenience of conducting the class tests one class period time slot should be kept at the first period of each working day.
- iv. The dates for the class tests shall be fixed by the Course Coordinator in consultation with the Head of the Department shall be announced accordingly.
- v. Spot test will be considered as class test and duration of which should not exceed ten minutes. The materials covered should be what were taught in previous immediate class. The maximum number of spot test should not exceed more than four. Maximum 50% spot test will be considered.
- vi. All class tests shall ordinarily be of equal value. The result of each individual class test shall be posted for information of the students preferably before the next class test is held.

- vii. Quizzes will be held on the basis of sessional/lab/field work classes. Duration of a quiz should not exceed one hour.

17. Earned Credits

The courses in which a student has obtained 'D' or a higher grade will be counted as credits earned by him/her. Any course in which a student has obtained 'F' grade will not be counted towards his/her earned credit calculation. A student who obtains 'F' grade in any core course in any semester, he/she will have to repeat the course. If a student obtains 'F' in an optional course he/she may choose to repeat the course or take a substitute course, if available. No 'F' grade will be counted for GPA calculation but will stay permanently on the grade sheet and transcript. When a student will repeat a review course in which he/she previously obtained 'F' grade, he/she will not be eligible to get a grade higher than B in such a course.

A student obtaining D grade in a course, will be allowed to repeat the course for the purpose of grade improvement if cumulative GPA of the student falls below 2.20. In such case he/she will be awarded the new grade that he/she obtains or retains his/her previous grade if he/she fails. A student obtaining 'C' or a better grade in a course will not be allowed to repeat the course for the purpose of grade improvement if cumulative GPA of the student falls below 2.20. Absence in semester final examination will result in 'F' grade unless he/she had withdrawn from the semester as per Article 12.4.

18. Measures for Helping Academically Weak Students

The minimum cumulative GPA requirements for obtaining a B. Sc. Engineering/ B. Arch degree is 2.20. The performance of a student will be evaluated in terms of two indices, viz. semester grade point average (GPA), and cumulative grade point average (cumulative GPA).

Students will be considered to be making normal progress toward a degree if their Cumulative GPA for all courses attended is 2.20 or higher. Students who regularly maintain semester GPA of 2.20 or higher are making good progress toward their degrees and are in good standing with the University. Students who fail to maintain this minimum rate of progress will not be in good standing rather considered to be academically weak. This can happen when one or more of the following conditions exist:

- i. Semester GPA falls below 2.20 or
- ii. Cumulative GPA falls below 2.20 or
- iii. Earned credits fall below 15 times the number of semesters attended/studied

All such students can make up deficiencies in GPA and credit requirements by completing 'F' graded course(s) and repeating 'D' graded course(s) in the next semester(s). When GPA and credit requirements are fulfilled, the student is considered to be returned to good standing.

19. Honours, Dean's List and University Gold Medal

19.1 Honours

Candidates for Bachelor's degree in Engineering/ Architecture will be awarded the degree with Honours if their cumulative GPA is 3.75 or above.

19.2 Dean's List

In recognition of excellent performance, the names of students who maintain a GPA of 3.75 or above in regular semester(s) of an academic year may be published in the Dean's List in each Faculty. In this regard Dean will give a certificate to the student confirming his name in the Dean's List. The student will be honoured Tk.2000 for his name in the Dean's List by the approval of academic council. Students who have earned 'F' grade in any course during any semesters will not be considered for Dean's List in that year.

19.3 University Gold Medal

University Gold Medal for outstanding graduates will be awarded to the students who secure the 1st position with cumulative GPA not below 3.75 in each Department. The student must have completed his/her undergraduate course work within four consecutive academic years for B. Sc. in Engineering and five consecutive academic years for B. Arch. Students who have earned 'F' grade in any course during any semesters will not be considered for University Gold Medal

20. Student Classification

For a number of reasons, it is necessary to have a definite system by which students can be classified as First, Second, Third, Fourth and Fifth Year. The students are classified according to the number of credit hours earned towards a degree. The following classification applies to the students.

Year	Earned Credits
First Year	From 0 to $< (T1 - 8)$
Second Year	From $(T1 - 8)$ to $< (T2 - 12)$
Third Year	From $(T2 - 12)$ to $< (T3 - 16)$
Fourth Year	From $(T3 - 16)$ to $< (T4 - 20)$
Fifth Year	$\geq (T4 - 20)$

Where,

T1 = total credits prescribed in the 1st Year 2nd Semester

T2 = total credits prescribed up to 2nd Year 2nd Semester

T3 = total credits prescribed up to 3rd Year 2nd Semester

T4 = total credits prescribed up to 4th Year 2nd Semester.

21. Probation and Suspension

Students who regularly maintain semester GPA of 2.20 or above satisfying the minimum credit requirements are making good progress toward their degrees and are in good standing with the University. Students who fail to maintain this minimum rate of progress may be placed on academic probation.

The status of academic probation is a reminder/warning to the student that satisfactory progress towards graduation is not being made. A student may be placed on academic probation when either of the following conditions exist:

- i. The semester GPA falls below 2.20, or
- ii. The cumulative GPA falls below 2.20
- iii. Earned Credits fall below 15 times the number of Semester attended/studied.

Students on probation are subject to such restrictions with respect to courses and extracurricular activities as may be imposed by the respective Head of the Department. The

minimum period of probation is one semester, but the usual period is for one academic year. This allows the academically weak student an opportunity to improve the GPA through the completing 'F' graded course(s) and repeating 'D' graded course(s) during the period. The probation may be extended for additional semesters until the student achieves an overall GPA of 2.20 or above. Once that condition is improved, the student is considered to be returned to good standing.

Academic probation is not to be taken lightly rather to be considered very seriously. A student on academic probation who fails to maintain a GPA of at least 2.20 during two consecutive academic years may be suspended from the University. A student who has been suspended may apply for consideration to the Dean of the faculty, but this application will not be considered until the student remains suspended at least for one full semester.

Petitions for reinstatement must set forth clearly the reasons for the previous unsatisfactory academic record and it must delineate the new conditions that have been created to prevent the recurrence of such work. Each such petition is to be considered individually on its own merits.

After consideration of the petition in consultation with the student, adviser and the respective Head of the Department, Dean in some cases, may reinstate the student if this is the first suspension. However, a second suspension will be regarded as final and absolute.

22. Minimum Earned Credits and GPA Requirements for Obtaining Degree

Minimum credit requirements for the award of bachelor of Science in Engineering/ bachelor of Architecture degree will be proposed by the Academic Committee for Undergraduate Studies (ACUG) on the recommendation of the respective faculty and approved by Academic Council. The minimum cumulative GPA requirements for obtaining a bachelor of Engineering/ Architecture degree is 2.20.

A student may take additional courses with the consent of his/her adviser in order to raise cumulative GPA, but he/she may take a maximum of 15 such additional credits beyond respective credit requirements for B. Sc. Engineering/ B. Arch degree during his/her entire period of study.

23. Time Limits for Completion of B. Sc. Engineering/ B. Arch Degree

A student must complete his/her studies within a maximum period of seven academic years for engineering degree and eight academic years for B. Arch degree. On valid medical ground, the period may be extended by the approval of Academic Council.

24. Industrial/Professional Training Requirements

Depending on each Department's own requirements a student may have to complete a prescribed number of days for industrial/professional training in addition to minimum credit and other requirements, to the satisfaction of the concerned Department.

25. Application for Graduation and Award of Degree

A student who has fulfilled all the academic requirements for Bachelor's degree will have to apply to the Controller of examination through his/her Adviser by the approval of Head of the Department for graduation. Provisional degree will be awarded on completion of Credit and GPA requirements. Such Provisional degrees will be confirmed by the Academic Council.

26. Absence during Semester

A student should not be absent from lab/sessional, assessment, jury, quizzes, class tests, class participation, attendance, etc. during the semester. Such absence will naturally lead to reduction in grade points/marks, which count towards the final grade. Absence in semester final examination will result in 'F' grade.

27. Review Courses

- i. Students obtained 'F' Grade in theory course having registered previously will get opportunity for registration of one course in each semester as review. One will be allowed to sit for the review course examination without making any change of previously obtained class test and class performance and attendance marks.
- ii. Review course examination will be conducted separately at the mid/end of the regular semester.
- iii. Any student who has failed in any sessional course(s) he may be allowed to complete the course(s) by attending the sessional classes with the students of next regular semester(s).

28. Special Examination

A special examination on 'F' graded course(s) may be conducted for the outgoing students who have a maximum of 3 (three) 'F' graded theory courses for completion of degree may be allowed to register for the special examination. The special examination will be arranged at a convenient time by the Controller of Examination within 8 weeks after the publication of results of the 4th year 2nd semester for B. Sc in engineering and 5th year 2nd semester for B. Arch regular examination. If a student repeats 'F' graded theory course(s) in special examination, he/she will not be eligible to get a grade higher than B in such course(s). A student who has failed in the special examination may register the course(s) in the regular semester.

Appendix-3: Ordinance related to disciplines

(Approved by the Syndicate on the recommendation of the Academic Council)

General Discipline

1. There shall be a Board of Discipline (শৃঙ্খলা কমিটি) to supervise and control the discipline of the students of the University.
2. The Board shall consist of the following members:
 - i. Vice-Chancellor Chairman
 - ii. Pro-Vice-Chancellor Member
 - iii. Respective Dean/Deans (As per accused student/students) Member
 - iv. Respective Head/Heads (As per accused student/students) Member
 - v. Respective Provost/Provosts of Halls of Residence Member
(As per accused student/students)
 - vi. Director (Students' Welfare) Member Secretary
3. At least 50% of the total members of the board shall form a quorum. The term of office of the nominated member shall be two years.

4. All incidents which appear to be acts of indiscipline and misconduct committed by any student, including immediate action taken, if any, shall be reported to the Vice-Chancellor by the respective Provost in respect of indiscipline and misconduct in the Halls of Residence and their premises, and by the Head of Department in respect of indiscipline and misconduct in the class rooms, laboratories, work-shops, all parts of the academic premises and any other place in the campus, and by the invigilator through the chief invigilator in respect of indiscipline and misconduct in the examination Halls, and by the person concerned (through respective Head/Section Chief) from among the students and employees of the University in respect of misconduct committed outside the University campus.
5. A student, who neglects his studies, disobeys and/or denounces orders, rules and regulations, ordinances, statutes of the University, shows misbehavior towards the employees of the University or commits any other offence which will be deemed by the Vice-Chancellor or Director of Students Welfare or teachers of the University as misconduct and breach of discipline, will be liable to disciplinary action which may range from warning, imposition of fines, suspension to expulsion for good from the University depending on the magnitude of the offence as will be deemed fit by the authorities competent to take disciplinary action as defined in Section 6.
6. Authorities to take disciplinary action with their respective powers to the extent to which they can impose punishment on any student or group of students are:

Authorities for taking disciplinary action	*Power	Appellate Authority
(1)	(2)	(3)
Board of Discipline	i) Warning ii) Imposing fine, iii) Suspension from Halls/University for any length of time and iv) Expulsion from Halls/University for good.	Academic Council
Vice-Chancellor	i) Warning ii) Imposing fine and iii) Suspension up to 2 (two) years from Halls/University iv) Expulsion from the Hall for good.	Board of Discipline
Head of Department (On students of his Department)	i) Warning and ii) Imposing fine up to Tk. 1000/-	Director
Director of Students' Welfare	i) Warning ii) Imposing fine up to Tk. 1000/- iii) Suspension from the Halls up to 2 (two) years and iv) Expulsion from the Hall for good.	Vice-Chancellor
Provosts (on resident or attached students of his Hall of residence)	i) Warning ii) Imposing fine up to Tk. 500/- and iii) Suspension from the Hall for a period of up to 2 (two) years	Director of Students' Welfare

*Respective authority may impose one or more punishment(s) at a time. Any of the above authority will inform the Director of Students' Welfare for any type of punishment imposed on any student for record.

7. If the Vice-Chancellor feels that the action taken against a student or a group of students (by any of the above authorities other than Board of Discipline) on an offence brought to him is not appropriate or that no action has been taken on any offence observed by him, he will take appropriate disciplinary action against a student or a group of students. If however, in any case of breach of discipline the Vice-Chancellor is of the opinion that a punishment more than a suspension of two years is required he shall refer the matter to the Board of Discipline for a decision.
8. A student or a group of students against whom an action has been taken by appropriate authority mentioned in column (1) of Section 6 may prefer an appeal to the appropriate appellate authority mentioned in column (3) of Section 6.
9. The Adviser of Students' Welfare will be responsible for enforcement of the disciplinary action taken against a student or a group of students. He shall maintain a register and shall record therein all actions taken against a student for indiscipline and misconduct and also shall record in all character certificates/Testimonials issued by the Director of Students' Welfare to offenders, those actions taken against them if so indicated by the Vice-Chancellor and the Board of Discipline, unless allowed to be expunged/condoned by the Vice-Chancellor on written prayer from the offenders.
10. Character certificates/Testimonials issued by the Director of Students' Welfare shall be produced by the students when the requested for that certificate.

Discipline of Examinations

11. The Chief invigilator shall be responsible for maintenance of discipline in the examination Halls.
12. An Invigilator on duty in Examination Hall shall report to the Chief Invigilator in case of breach of discipline in the examination hall. The Chief invigilator may expel the examinee concerned from the hall debarring him from appearing in that particular examination.
13. Breach of discipline in the examination halls shall be reported by the invigilator through the Chief Invigilator to the Vice-Chancellor.
14. The candidates shall strictly follow the following instructions.
 - i) Candidates are forbidden to write their names on the cover or any part of the answer script. If any candidate does so, his answer script will not be assessed.
 - ii) Each candidate must write legibly his Examination Roll Number on the cover of scripts. If any candidate omits to write his Examination Student Number and Registration Number on the cover of his answer script, the paper may not be assessed.
 - iii) When more than one answer script is used, each additional script should be stitched to the first script immediately after it is supplied, and the Examination Student Number and Registration Number should also be written by the candidate on the cover of the additional script or scripts immediately.
 - iv) No loose paper will be provided for scribbling, and no paper is to be brought in for this purpose. Any candidate found with loose paper in his possession will be

expelled from the examination hall. All works must be done in the scripts provided and pages must not be torn out. The scripts provided must be submitted; it cannot be replaced by another, but, if necessary, additional scripts will be given.

All works intended for assessment by the examiner should be written on both sides of the paper.

- v) Candidates are forbidden to write anything whatsoever on the question paper.
 - vi) In any matter not specifically mentioned in these rules, candidates are required to abide by the decision of the invigilator in the examination room.
 - vii) No candidate will be allowed to leave the examination room until one hour has elapsed from the time when the question papers are given out.
 - viii) Candidates are forbidden to carry Mobile Phone with them in the examination room.
15. Disciplinary action will be taken against candidates reported to have violated the instructions under Section 14 or resorted to unfair means and/or acts of indiscipline at the different examinations as follows:
- i. Attempts to communicate with other examinee or examinees in the examination hall: first time - warning which may be accompanied by a change of seats; second time - deduction of 5% of the total marks of paper; third time - expulsion from the examination hall for that paper.
 - ii. Possession of related to the particular subject of examination or copying from any other source: expulsion from examination hall and cancellation of the examination and expulsion from the university for one to two years. Writings in the person of the examinee or in his apparels, in papers, drawing instruments and scales etc. found with him or off or near the desk, bench or chair will be considered as writings in possession of the examinee.
 - iii. Possession of mobile phones, media players etc. Deduction of 5% of the total marks of the paper.
 - iv. Use of violent language and holding out threats to examiners and invigilators: expulsion from the whole examination and/or expulsion from the University for good.
 - v. Attempts to get possession of the question paper or examination scripts before the examination: expulsion from the whole examination and expulsion from the University for one to two years.
 - vi. Writings on loose papers not related to the examination (viz. blotting paper, question paper etc.); seizure of the writings and cancellation of the answer script and expulsion from the examination hall.
 - vii. Attempts to influence the examiner: cancellation of the paper.
 - viii. Impersonating or causing to impersonate in the examination hall: cancellation of the whole examination and expulsion from the University for good.
 - ix. Insertion in the examination script, answer to any question or questions written outside the examination hall: cancellation of the whole examination and expulsion for one to two years.

- x. Having a question answered by someone else: cancellation of the whole examination and expulsion for two years.
 - xi. If a student or outsider appears at the examination for any student: cancellation of the whole examination for both students, expulsion for two years for the student who appears at the examination for any student and one year for other student.
16. The invigilator is empowered to warn a student and deduct his mark up to 5% as mentioned in section 15 (i) above. The Chief Invigilator is empowered to expel students from the examination room/hall if he is satisfied after an on the spot enquiry that the student is guilty of misconduct mentioned in section 15, above. In all such cases the matter has to be reported to the Vice-Chancellor with incriminating documents, if any. Decisions for cancellation of the examination and expulsion from the University for a period of not exceeding 2 (two) years will be taken by the Vice-Chancellor. For expulsion for a period more than 2 (Two) years, the Vice-Chancellor shall refer the matter to the Board of Discipline provided in Section 6.
17. As the Class Test/Quiz Test is the part of whole examination, therefore, disciplinary action for any misconduct in this examination will also be applicable as mentioned in section 11 through 16.

Appendix-4: Details of Exempted Courses

	Bachelor in Architecture, DUET		Diploma-in-Engineering (Architecture technology)		
Sl.	Course Code	Course Title	Course Code	Course Title	Semester
1	CE 1012	Cost Estimation	66447	Basic estimating and Costing	4
2	CE 1014	Computer Aided Drawings	66132	Computer Aided Drawings	3
	CE 1014	Computer Aided Drawings	66143	Working Drawing with CAD	4
3	CE 1011	Building Specifications	66172	Professional Practice	7
4	CE 1011	Construction Process	66435	Fundamental surveying	3
	CE 1013	Surveying	66446	Fundamental construction process	4
5	CE 1015	Building Materials	66112	Architectural Materials	1
6	HSS 1811	Economics and Sociology	65811	Social science (Economics)	1

Bachelor in Architecture, DUET			Diploma-in-Engineering (Architecture and Interior Design technology)		
Sl.	Course Code	Course Title	Course Code	Course Title	Semester
1	CE 1012	Cost Estimation	66447	Basic Estimating and Costing	4
2	CE 1014	Computer Aided Drawings	68742	CAD-1	4
3	CE 1014	Computer Aided Drawings	68774	AIDT Professional Practice	7
4	CE 1013 CE 1011	Surveying and Construction Method Construction Process	66446	Fundamental Construction Process	4
			66435	Fundamental Surveying	3
5	CE 1013	Surveying	68711	Architectural Materials and Product	1
6	HSS 1811	Economics and Sociology	65811	Social Science	1

Bachelor in Architecture, DUET			Diploma-in-Engineering Civil Technology		
Sl.	Course Code	Course Title	Course Code	Course Title	Semester
1	CE 1012	Cost Estimation	66442	Estimating and Costing-1	4
			66455	Estimating and Costing-II	5
2	CE 1014	Computer Aided Drawings	66443	Civil Engineering Drawing-2 (CAD)	4
			66464	Civil Engineering Drawing -3 (CAD)	6
3	CE 1011	Construction Process	68873	Construction Management and Documentation	7
4	CE 1013	Surveying	66432	Surveying-1	3
			66444	Surveying-2	4
			66452	Surveying-3	5
			66461	Advance Surveying	6
			66433	Construction Process-1	3
			66451	Construction Process-2	5
5	CE 1015	Building Materials	66421	Civil Engineering Materials	1
6	HSS 1811	Economics and Sociology	65811	Social Science	3

Bachelor in Architecture, DUET			Diploma-in-Engineering Civil (wood) Technology		
Sl.	Course Code	Course Title	Course Code	Course Title	Semester
1	CE 1012	Cost Estimation	66442	Estimating and costing -1	4
			66455	Estimating and Costing -2	5
2	CE 1014	Computer Aided Drawings	66443	Civil Engineering Drawing-2	4
			66464	Civil Engineering Drawing-3 (CAD)	6
3	CE 1011	Construction Process	66433	Construction Process -1	3
	CE 1013	Surveying	66451	Construction Process-2	5
4	CE 1013	Surveying and Construction Method	66432	Surveying -1	3
			66444	Surveying -2	4
			66452	Surveying -3	5
			66451	Construction Process-II	5
5	CE 1015	Building Materials	66421	Civil Engineering Materials	2
6	CE 1015	Building Materials	65811	Social Science	3

Contents of the exempted courses are similar to the contents of the above courses covered in the Diploma-in-Engineering (Architecture technology, Architecture and Interior Design technology, Civil Technology and Civil [Wood] Technology).

Appendix-5: Equivalent Course List

Equivalent Course list for the previous/Old curriculum is given below:

- **1st Year 1st Semester (Exempted)**

Sl. No	Course (Old Curriculum)	Credit	Course (New Curriculum)	Credit
1.	ARCH-1212: Architectural Graphics-I	3.0	ARCH 1222: Architectural Graphics I	1.5
2.	ARCH-1312: Computer Applications - I	1.5	ARCH 1224: Computer Applications I	1.5
3.	ARCH-1314: Working Drawing-I	1.5	ARCH 3212: Working Drawing I	1.5
4.	ARCH-1511: Introduction to World Civilization	3.0	ARCH 1521: History of Architecture I	2.0
5.	CE-1011: Building Specifications	3.0	CE 1011: Construction Process (Exempted)	2.0
6.	CE- 1012: Cost Estimation	1.5	CE 1012: Cost Estimation (Exempted)	1.5
7.	CE-1013: Surveying & Construction Method	4.0	CE 1013: Surveying (Exempted)	2.0
8.	Hum-1611: Economics & Sociology	3.0	HSS 1811: Economics and Sociology (Exempted)	2.0

• **1st Year 2nd Semester**

Sl. No	Course (Old Curriculum)	Credit	Course (New Curriculum)	Credit
Core Courses				
1.	ARCH-1122: Design- I	6.0	Nil *	
2.	ARCH-1222: Architectural Graphics-II	3.0	ARCH 2212: Architectural Graphics II	1.5
3.	ARCH-1521: History of Architecture- I	2.0	ARCH 1521: History of Architecture I	2.0
4.	ARCH-1621: Aesthetics and Design	2.0	ARCH 1823: Aesthetics and Design	2.0
5.	ARCH-1721: Building and Finished Materials	2.0	ARCH 1821: Advanced Building Materials and Technologies	2.0
6.	Math-1621: Mathematics	3.0	Math 1621: Mathematics	3.0
7.	Ph-1621: Physics	3.0	Phy 1621: Physics	3.0

* There is no equivalent course for ARCH- 1122: Design- I.

• **2nd Year 1st Semester**

Sl. No	Course (Old Curriculum)	Credit	Course (New Curriculum)	Credit
Core Courses				
1.	ARCH-2112: Design- II	6.0	ARCH 2112: Design Studio III	4.5
2.	ARCH-2312: Computer Applications - II	1.5	ARCH 2812: Computer Applications II	1.5
3.	ARCH-2314: Photography & Graphic Reproduction	1.5	ARCH 1824: Photography and Graphic Reproduction	1.5
4.	ARCH-2411: Climate and Design	2.0	ARCH 2411: Climate and Design	2.0
5.	ARCH-2511: History of Architecture- II	2.0	ARCH 2511: History of Architecture II	2.0
6.	CE-2111: Structure -I	2.0	CE 2111: Structure I	2.0
7.	Hum-2611: English Language	2.0	HSS 1621: English Language	2.0
8.	Hum-2612: English Language Lab	1.5	HSS 2611: English Language Lab	1.5
Optional Courses				
9.	ARCH-2611: Art Appreciation	2.0	ARCH 2815: Art Appreciation	2.0
	ARCH-2811: Ecology		ARCH 3311: Ecology	2.0

• **2nd Year 2nd Semester**

Sl. No	Course (Old Curriculum)	Credit	Course (New Curriculum)	Credit
Core Courses				
1.	ARCH-2122: Design- III	6.0	ARCH 2122: Design Studio IV	6.0
2.	ARCH-2421: Architectural Acoustics & Lighting	2.0	ARCH 2421: Architectural Acoustics and Lighting	2.0
3.	ARCH-2521: History of Architecture- III	2.0	ARCH 2521: History of Architecture III	2.0
4.	ARCH-2621: Basic Physical Planning	2.0	ARCH 2621: Basic Physical Planning	2.0
5.	CE-2021: Plumbing	2.0	CE 2011: Plumbing	2.0
6.	CE-2121: Structure -II	2.0	CE 2121: Structure II	2.0
Optional Courses				
7.	ARCH-2222: Sculpture and Graphic Art	2.0	Nil *	
	CE-2022: Building Materials & Construction Workshop		CE 3012: Building Materials and Construction Workshop	1.5

* There is no equivalent course for ARCH-2222: Sculpture and Graphic Art.

• **3rd Year 1st Semester**

Sl. No	Course (Old Curriculum)	Credit	Course (New Curriculum)	Credit
Core Courses				
1.	ARCH-3112: Design- IV	10.0	ARCH 3112: Design Studio V	6.0
2.	ARCH-3312: Working Drawing II	1.5	ARCH 3822: Working Drawing II	1.5
3.	ARCH-3511: Modern Architecture	2.0	ARCH 3511: Modern and Contemporary Architecture	2.0
4.	CE-3111: Structure -III	2.0	CE 3111: Structure III	2.0
5.	EEE-3111: Electrical Equipments	2.0	EEE 3121: Electrical Equipments	2.0
Optional Courses				
6.	Hum-3611: Logic and Philosophy	2.0	HSS 3611: Logic and Philosophy	2.0
	Hum-3613: Psychology		Nil *	

* There is no equivalent course for Hum-3613: Psychology.

• **3rd Year 2nd Semester**

Sl. No	Course (Old Curriculum)	Credit	Course (New Curriculum)	Credit
Core Courses				
1.	ARCH-3122: Design- V	10.0	ARCH 3122: Design Studio VI	6.0
2.	ARCH-3322: Interior Design Studio	1.5	ARCH 4824: Interior Design Studio	1.5
3.	ARCH-3521: Contemporary Architecture	2.0	ARCH 3511: Modern and Contemporary Architecture	2.0
4.	ARCH-3621: Urban Design- I	2.0	ARCH 3621: Urban Design I	2.0
5.	CE-3121: Structure -IV	2.0	CE 3121: Structure IV	2.0
6.	ME- 3521: Mechanical Equipments	2.0	ME 4511: Mechanical Equipments	2.0
Optional Courses				
7.	ARCH-3623: Interior Design	2.0	ARCH 2823: Interior Design	2.0
	Hum-3621: Urban Economics & Urban Sociology		HSS 3621: Urban Economics and Urban Sociology	2.0

• **4th Year 1st Semester**

Sl. No	Course (Old Curriculum)	Credit	Course (New Curriculum)	Credit
Core Courses				
1.	ARCH-4112: Design- VI	10.0	ARCH 4112: Design Studio VII	6.0
2.	ARCH-4312: Landscape Design Studio	1.5	ARCH 4826: Landscape Design Studio	1.5
3.	ARCH-4511: Architecture of Bengal- I	2.0	Nil *	2.0
4.	ARCH-4811: Housing	2.0	ARCH 4611: Housing	2.0
5.	CE-4111: Structure -V	2.0	CE 4111: Structure V	2.0
Optional Courses				
6.	ARCH-4411: Landscape Design	2.0	ARCH 4811: Landscape Design	2.0
	ARCH-4611: Urban Design- II		ARCH 4813: Urban Design II	2.0

* There is no equivalent course for ARCH-4511: Architecture of Bengal- I.

• **4th Year 2nd Semester**

Sl. No	Course (Old Curriculum)	Credit	Course (New Curriculum)	Credit
Core Courses				
1.	ARCH-4122: Design- VII	10.0	ARCH 4122: Design Studio VIII	7.5
2.	ARCH-4521: Architecture of Bengal-II	2.0	ARCH 4511: Architecture of Bengal	2.0
3.	ARCH-4523: Architectural Conservation	2.0	ARCH 5411: Architectural Conservation	2.0
4.	CE-4121: Structure -VI	2.0	CE 5111: Structure VI	2.0
Optional Courses				
6.	ARCH-4421: Sustainable Design	2.0	ARCH 2821: Energy Efficient Building Design	2.0
	ARCH-4423: Vernacular Architecture & Settlements		ARCH 3821: Vernacular Architecture and Settlements	2.0

• **5th Year 1st Semester**

Sl. No	Course (Old Curriculum)	Credit	Course (New Curriculum)	Credit
Core Courses				
1.	ARCH-5112:Design- VIII	12.0	ARCH 5112: Design Studio IX	9.0
2.	ARCH-5312: Seminar	1.5	ARCH 5812: Seminar	1.5
3.	ARCH-5813: Research Methodology	2.0	ARCH 5811: Research Methodology	2.0
4.	Hum-5611:Project Management & Accounting	2.0	HSS 5611: Project Management and Accounting	2.0

• **5th Year 2nd Semester**

Sl. No	Course (Old Curriculum)	Credit	Course (New Curriculum)	Credit
Core Courses				
1.	ARCH-5122:Design- IX Thesis	12.0	ARCH 5122: Design Studio X	9.0
2.	ARCH-5322: Dissertation	3.0	ARCH 5822: Dissertation	1.5
3.	ARCH-5821: Professional Practice	2.0	ARCH 5721: Professional Practice and Ethics	2.0
