2022

Curriculum of Undergraduate Studies

Department of Architecture Dhaka University of Engineering & Technology, Gazipur

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 fouryear 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 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. Tittle 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 behaviour, effective interpersonal and communication skills, and ability to work in multidisciplinary team in all career endeavours.
- 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 curriculam 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 programme, 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 behaviour 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 behaviour, effective interpersonal and communication skills, and ability to work in multidisciplinary team in all career endeavours.
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:

The Dachelor C	Areinteeture i Tograni Outcomes (105) 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)
	Creative and imaginative skills: Identify understand and categorize
PO2	complex architectural problems and develop ability to provide creative
102	innovative and efficient solution for those (GA02)
	Architectural design thinking and design development skills:
РОЗ	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	M/PEO PEO1		PEO3	PEO4	PEO5
M1 🗸		\checkmark	\checkmark		
M2		\checkmark	\checkmark		
M3	✓	✓	~	✓	
M4			\checkmark	~	\checkmark

16. Mapping of POs to PEOs

Mapping of POs and PEOs is given below:

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

17. Mapping courses with the POs

		U										
Courses	Program LearningOutcomes (POs) (Cross marks indicate that the corresponding course fulfilled the particular PO)											
	P01	P02	P03	P04	P05	P06	P07	PO8	P09	P010	P011	P012
	1 st year 1 st semester											
ARCH 1112									\checkmark			
CE 1012												
CE 1014												
CE 1011												
CE 1013												
CE 1015												
HSS 1811												

1 st vear 2 nd semester												
ARCH 1122					<i>j</i> eur 2							
ARCH 1222	1	1	•		2				1	•		
ARCH 1222	N				N				N	al		
ARCH 1224	N	N							N	V		
AKCH 1521	N		-	γ	-			,	1			
HSS 1621	N			1				N	N			
Math 1621	V			N								
Phy 1621												
				2	nd year	1 st sem	ester					
ARCH 2112												
ARCH 2212												
ARCH 2411												
ARCH 2511												
CE 2011												
CE 2111	V			ب ا								
022111	•			21	^{1d} vear 2	2 nd sem	nester					
ADCH 2122				-	<u> </u>							
ARCH 2122		N	N	N		N	N		N			
ARCH 2421	N			<u>N</u>			N					
ARCH 2521	N			N		N						
ARCH 2621	N			<u>ν</u>		γ						
CE 2121				N	rd	4 st						
		1	1	3	^{ru} year	1 st sem	ester		1			
ARCH 3112	1	N	N	N			N		N			
ARCH 3312	V					ļ	,		N			
ARCH 3311				V								
ARCH 3511				V								
CE 3111												
HSS 3611												
3 rd year 2 nd semester												
ARCH 3122												
ARCH 3621				\checkmark								
CE 3121				\checkmark								
EEE 3121	\checkmark			\checkmark								
				4	th year	1 st sem	ester					
ARCH 4112												
ARCH 4511												
ARCH 4611												
CE 4111												
ME 4511												
			1	4	th year 2	2 nd sem	ester					
ARCH 4122					-							
ARCH 4222		ب م	1	•		,	,	,	,	ب ا	V	
		v	v	5	th vear	1 st sem	ester			v	v	v
A DOIL 5112		1	1	1	y cui		1	1	1		1	
ARCH 5112	.1	γ	N	N ./		N	N	N	N		N	
AKCH 5411	N			N			N					
CE 5111	N			N								1
HSS 5611	\checkmark			ν	th.							\checkmark
				5	^m year 2	^{2^{nu} sem}	lester					
ARCH 5122												
ARCH 5721												
HSS 5621												

	Elective Theory Courses (Set-A)										
ARCH 1821											
ARCH 1823	Ń										
ARCH 2813	V										
ARCH 2815	V			V							
ARCH 2821	V										
ARCH 2823											
ARCH 3811											
ARCH 3813											
ARCH 3821											
HSS 3621											
		•	ŀ	Electiv	e Theor	y Cou	rses (S	et-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										\checkmark	
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				\checkmark							

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.	Туре	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

			Co	ore			Elec	ctive		
SI.	Year/	Theory		Ses	Sessional		eory	Ses	sional	Total Credit
INU	Semester	Credit Hour	Contact Hour	Credit Hour	Contact Hour	Credit Hour	Contact Hour	Credit Hour	Contact Hour	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

19.3. Summary of Course Plan

*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)

19.4. Distribution of Core Courses

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

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

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

Course Type	SL No	Course Code	Course Title	Contact Hrs/week	Credit
Coro	1	ARCH 1122	Design Studio II	9	4.5
Sossional	2	ARCH 1222	Architectural Graphics I	3	1.5
Sessional	3	ARCH 1224	Computer Applications I	3	1.5
Core	4	ARCH 1521	History of Architecture I	2	2
	5	HSS 1621	English Language	2	2
Theory	6	Math 1621	Mathematics	3	3
	7	Phy 1621	Physics	3	3
Elective	8	Should be s	elected from Set-A Elective	3	15
Sessional	0	Sessionals		5	1.5
Elective	0	Should be s	elected from Set-A Elective	2	γ
Theory	9	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	1	ARCH 2112	Design Studio III	9	4.5
Sessional	2	ARCH 2212	Architectural Graphics II	3	1.5
	3	ARCH 2411	Climate and Design	2	2
Core	4	ARCH 2511	History of Architecture II	2	2
Theory	5	CE 2011	Plumbing	2	2
Theory	6	CE 2111	Structure I	2	2
Elective	7	Should be sel	ected from Set-A Elective	3	1.5
Sessional	8	Sessionals		3	1.5
Elective	0	Should be sel	ected from Set-A Elective	2	2
Theory	9	Theory		2	Z
			Semester Total	28	19

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

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

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

Course Type	SL No	Course Code	Course Title	Contact Hrs/week	Credit
Core	1	ARCH 3112	Design Studio V	12	6
Sessional	2	ARCH 3212	Working Drawing I	3	1.5
	3	ARCH 3311	Ecology	2	2
Core Theory	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	7	Should be sel	ected from Set-A Elective	3	1.5
Sessional	8	Sessionals		3	1.5
Elective Theory	9	Should be sel Theory	ected from Set-A Elective	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
Com	2	ARCH 3621	Urban Design I	2	2
Core Theory	3	CE 3121	Structure IV	2	2
	4	EEE 3121	Electrical Equipments	2	2
Elective Sessional	5	Should be s Sessionals	elected from Set-A Elective	3	1.5
Elective	6	Should be s	elected from Set-A Elective	2	2
Theory	7	Theory		2	2
Semester	Total			25	17.5

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

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

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

Course Type	SL No	Course Code	Course Title	Contact Hrs/week	Credit				
Core	1	ARCH 4122	Design Studio VIII	15	7.5				
Sessional	2	ARCH 4222	Professional Training*		1.5				
	3			3	1.5				
Elective	4	Should be se	elected from Set-B Elective	3	1.5				
Sessional	5	Sessionals		3	1.5				
	6			3	1.5				
			Semester Total	27	15				
*Students wi	*Students will work under the direct supervision of an experienced, registered architect (full member of								
IAB) and als	IAB) and also host of the firm or an office. The duration of the training will be 8 weeks (300 hrs). See								
details in Sec	tion 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
	2	CE 5111	Structure VI	2	2
Core	3	ARCH 5411	Architectural Conservation	2	2
Theory	4	HSS 5611	Project Management and Accounting	2	2
Elective Sessional	5	Should be se Sessionals	elected from Set-B Elective	3	1.5
Elective	6	Should be se	elected from Set-B Elective	2	2
Theory	7	Theory		2	2
			Semester Total	31	20.5

Course Type	SL No	Course Code	Course Title	Contact Hrs/week	Credit
Core Sessional	1	ARCH 5122	Design Studio X	18	9
Core	2	ARCH 5721	Professional Practice and Ethics	2	2
Theory	3	HSS 5621	Bangladesh Studies and Government	2	2
Elective Sessionals	4	Should be see Sessionals	elected from Set-B Elective	3	1.5
Elective Theory	5	Should be se Theory	elected from Set-B Elective	2	2
Semester 7	Total			27	16.5

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

19.5. Distribution of Elective Courses

19.3.1 Elective Theory Courses: Set- A

Required credits 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 credits 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 1^{st} , 2^{nd} and 3^{rd} 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, Modelling 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 Modelling 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

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

e) Design and Design Communication Studies [72 Credits]

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, Modelling 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 Modelling in Architectural	1.5
17.	Practice	
18.	ARCH 5312: Seminar	1.5
19.	ARCH 5814: Visual Methods in Planning and Development	1.5
20.	ARCH 5822: Dissertation	1.5
Total O	ffered	28.5
Minimu	m 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						
Minimu	m credit to be earned	20				

g) Internship [1.5 Credit]

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

PART C

20. Description of Core Courses

20.3. 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 pregraduation 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.

Cour	se Outcomes (COs): at the end of	Teaching-	Assessment		
the Co	ourse, the student will be able to -	Learning	Strategy		
		Strategy			
CO1	Identify point, line, shapes and	Classroom	Class		
	form in nature.	instruction, field	Assessments		
		survey and free			
		hand sketch.			
	-	~	~		
CO2	Explore human senses,	Classroom	Class		
	fundamental design principles	instruction,	Assessments		
	(primary elements of design,	exploratory			
	proportion and scale, ordering	discussion,			
	principles), relationship of form and	demonstration,			
	space and the process of design with	free hand			
	an emphasize on two dimensions.	sketch.			
CO3	Create two dimensional	Classroom	Class		
	architectural compositions with	instruction,	Assessments and		
	basic elements of architectural	exploratory	Final Presentation		
	design by exploring nature, creative	discussion, free			
	processes, and architectural design	hand sketch and			
	principles.	model making.			

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

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

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

20.1.2 CE 1012

DEGREE PROGRAM: Bachelor of Architecture								
COURSE CODE: CE 1012								
COU	COURSE TITLE: Cost Estimation							
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

Cour the C	se Outcomes (COs): at the end of ourse, 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
CO2	Analyze the cost of construction of individual items and control of cost.		Diploma in Engineering
CO3	Prepare detail schedule of construction and cost of a construction with detail step by step procedure.		

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 Uunderstanding 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

Cour	se Outcomes (COs): at the end of	Teaching-	Assessment		
the Co	ourse, the student will be able to -	Learning	Strategy		
		Strategy			
CO1	Identify the drawing environments,	Exempted	Admission		
	drawing aids, commands and		test/Class and		
	printing techniques in Auto CAD.		Examination		
			conducted in		
CO2	Analyze the procedures and		Diploma in		
	techniques of drawing and printing		Engineering		
	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 masonary, 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 masonary, its types and features; bond in brick masonary;

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

		A		A	
Manning of	f Course Learning	7 Autromes ((('Os) to Proe	oram Outcomes	(P()c)·
mapping 0	i Course Learning	g Outcomes (siam Outcomes	

	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 surveyingprinciples 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	e Learning Outcomes (COs): at the	Teaching-	Assessment
end	of the Course, the student will be	Learning	Strategy
	able to -	Strategy	
CO1	Describe principles and techniques of engineering survey, physical surveys, leveling and countouring.	Exempted	Admission test/Class and Examination
CO2	Illustrate chain survey, traverse survey; plane table survey, cadastral survey, and survey with total station, leveling and contouring.		conducted in Diploma in Engineering
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	\checkmark											
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

Cours	se Learning Outcomes (CLOs): at	Teaching-	Assessment
the end	d of the Course, the student will be	Learning	Strategy
	able to -	Strategy	
CO1	Describe building materials, their	Exempted	Admission
	classification, manufacturing		test/Class and
	process, uses, preparation and		Examination
	method of installation, modularity		conducted in
	and qualities.		Diploma in
CO2	Assess the properties and		Engineering
	characterisitcs 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):

	0			0		· · ·		0			· · · ·	/
	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.

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

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

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

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

20.4. 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	r 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

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

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

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

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 ^s	t 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

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

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

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

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

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

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

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

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 ^s	t 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 th	e Teaching-l	Learning ar	nd Assessment
Strategy						

Cour	se Outcomes (COs): at the end of	Teaching-	Assessment	
the Co	ourse, the student will be able to -	Learning	Strategy	
		Strategy		
CO1	Explain acquired knowledge of	Class Lecture	Final Exam/Class	
	significant structures and buildings	and exploratory	Test	
	in their historical, regional and	discussions		
	cultural contexts.			
CO2	Compare different architectural	Class Lecture	Final Exam/Class	
	styles and construction techniques	and exploratory	Test/Assignment	
	of prehistoric, Greek and Roman	discussions		
	periods.			
CO3	Critically analyze the construction	Class Lecture	Final Exam/Class	
	techniques, architectural problems,	and exploratory	Test	
	practice and solutions of	discussions		
	architecture during the periods			
	covered.			
CO4	Evaluate the technical and formal	Class Lecture	Final Exam/Class	
	architectural vocabulary of	and exploratory	Test	
	prehistoric, Greek and Roman	discussions		
	periods.			

	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

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

	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.

Cour	se Outcomes (COs): at the end of	Tea	ching-	Assessment		
the Co	ourse, the student will be able to -	Lea	arning	S	Strategy	
		Str	rategy			
CO1	Remember the basic definitions,	Class	Lecture	Final	Exam/Class	
	theories and properties of calculus	and	problem	Test		
	and coordinate geometry.	solving	S			
CO2	Understand the core ideas and	Class	Lecture	Final	Exam/Class	
	concepts of differential calculus,	and	problem	Test		
	integral calculus, and coordinate	solving	5			
	geometry in two and three					
	dimensions.					
CO3	Apply the concepts and principles	Class	Lecture	Final	Exam/Class	
	of differential, integral calculus,	and	problem	Test		
	straight lines, circles and planes to	solving	5			
	problem solving in engineering					
	fields.					
CO4	Analyze the behaviour of the	Class	Lecture	Final	Exam/Class	
	function, its derivatives, by using	and	problem	Test		
	calculus and shapes and dimensions	solving	5			
	of geometrical objects and their					
	other properties by using analytic					
	geometry.					

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

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

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 Fraunhoffer diffraction, Fraunhoffer 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.

Cour	se Outcomes (COs): at the end of	Tea	ching-	Assessment		
the Co	ourse, the student will be able to -	Lea	arning	S	Strategy	
		Str	ategy			
CO1	Describe the thermal properties,	Class	Lecture	Final	Exam/Class	
	basic of building acoustics required	and	problem	Test		
	for a professional architect, basic	solving	5			
	requirements of a big hall with least					
	possible noise, polarized and					
	unpolarized light					
CO2	Calculate thermal properties, wave	Class	Lecture	Final	Exam/Class	
	energy, wavelengths, frequency,	and	problem	Test		
	epoch, wavelength of	solving	5			
	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.					
CO3	Analyze their understanding about	Class	Lecture	Final	Exam/Class	
	heat and thermodynamics for	and	problem	Test		
	calculating thermal properties like	solving	3			
	thermal conductivity, Van der					
	Waals constant, entropy, atomicity,					
	elasticity of gases, enthalpy, free-					
	energy etc.					

Manning of	Course	Autcomes	$(\mathbf{CO}_{\mathbf{C}})$	to Program	Outcomes	$(\mathbf{PO}_{\mathbf{c}})$
wapping or	Course	Outcomes	(UUS)	to Frogram	Outcomes	

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

20.5. 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:								

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.

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

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1				\checkmark								
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)	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

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

	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.

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

CO4	Recommend passive strategies for	Class Lecture	Final Exam/Class		
	designing climate responsive sites,	and exploratory	Test/Assignment		
	buildings and communities in the	discussions			
	context of local and tropical				
	climate.				

	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	Exam Hours: 3.00 CIE Marks: 30% SEE Marks: 70%								
Course Type: Core Theory	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;

Cours	se Outcomes (COs): at the end of	Teaching-	Assessment		
the Co	ourse, the student will be able to -	Learning	Strategy		
		Strategy			
CO1	Explain the influences and societal	Class Lecture	Final Exam/Class		
	forces behind the architectural	and exploratory	Test		
	design and the process of creating	discussions			
	new architectural trend in Europe				
	from Early Christian to Renaissance				
	periods.				
CO2	Critically analyze the construction	Class Lecture	Final Exam/Class		
	techniques, architectural problems,	and exploratory	Test/ Assignment		
	practice, and solutions of these	discussions			
	periods.				
CO3	Evaluate the technical and formal	Class Lecture	Final Exam/Class		
	architectural vocabulary of	and exploratory	Test/ Assignment		
	different regions of Europe from 2 nd	discussions			
	to 17 th century AD.				

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

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

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	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.

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

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	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.

Cour	se Outcomes (COs): at the end of	Teaching-	Assessment		
the Co	ourse, the student will be able to -	Learning	Strategy		
		Strategy			
CO1	Identify different types of forces	Class Lecture	Final Exam/Class		
	and force systems.	and problem	Test		
		solving			
CO2	Sketch the free body diagrams of	Class Lecture	Final Exam/Class		
	members.	and problem	Test/ Assignment		
		solving			
CO3	Calculate the practical engineering	Class Lecture	Final Exam/Class		
	problems related to force,	and problem	Test		
	equilibrium, resultants and	solving			
	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.				

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. 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 yea	ar 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	g and	Assessment
Strategy								

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

Mapping of Cours	e Outcomes (COs) t	to Program Outcomes (POs):	
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	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)	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 activites and building types.

Course Content: The physiology of sound; perception, generation, and propagation of sound. behavior of sound in enClosedd 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.

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

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

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C01	\checkmark											
CO2	\checkmark											
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)	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	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 th	e Teaching-l	Learning ar	nd Assessment
Strategy						

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

	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)	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	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

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

	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

Cours the Co	se Outcomes (COs): at the end of ourse, 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

	101	102	105	104	105	100	10/	100	109	1010	rom	1012
CO1	\checkmark											
CO2												
CO3												
CO4												

20.7. 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 yea	r 1 st semester				
Exam Hours: 0.00CIE 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.

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

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1				\checkmark								
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 yea	r 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

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

	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.

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

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

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

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 Lloyed 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 poststructuralist 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.

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

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

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	\checkmark											
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 indeterminant 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.

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

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	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

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

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

20.8. 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 yea	ar 2 nd semester					
Exam Hours: 0.00 CIE Marks: 100% SEE Marks: 0%							
Course Typre: 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.

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

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

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

20.6.2 ARCH 3621

DEGREE PRO COUF COURS	DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 3621 COURSE TITLE: Urban Design I									
CREDIT: 2 (2hrs/week)	CREDIT: 2 (2hrs/week) TERMS OFFERED: 3 rd year 2 nd semester									
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%								
Course Typre: 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.

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

CO3	Analyze	traditional	and	Class Lecture		Final Exam/Class
	contemporary	concepts	and	and exploratory		Test/Assignment
	approaches of	urban design.		discuss	sions	
CO4	Design an urb	an environment	using	Class Lecture		Final Exam/Class
	different urb	an design the	eories,	and ex	ploratory	Test/Assignment
	methods and p	rinciples.		discuss	sions	

	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.

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

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

20.6.4 EEE 3121

DEGREE PRO COU COURSE	OGRAM: Bachelor of Ard IRSE CODE: EEE 3121 TITLE: Electrical Equipt	chitecture nents							
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.

Cour	se Outcomes (COs): at the end of	Teaching-	Assessment
the Co	ourse, the student will be able to -	Strategy	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

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

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

20.9. 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 Typre: 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.

Cours	se Outcomes (COs): at the end of	Teaching-	Assessment
the Co	ourse, the student will be able to -	Learning	Strategy
		Strategy	
CO1	Interpret urban activities,	Classroom	Class
	movement and environmental	lecture, study	Assessments/Fina
	aspects to attain livability in cities	and analysis,	l Jury
	and quality of life according to	field survey,	
	social, economic, and physical	exploratory	
	processes which have continuously	discussion and	
	reshaped the city.	feedback.	
CO2	Apply a range of contemporary	Demonstration,	Class
	urban design knowledge using	exploratory	Assessments/Fina
	problem solving skills in a complex	discussion and	l Jury
	real-world situation.	feedback.	

CO3	Create urban design ideas and	Demonstration,	Class
	proposals integrating participatory	exploratory	Assessments/Fina
	approaches using a range of	discussion and	l Jury
	technical skills and different media.	feedback.	
CO4	Originate the architectural design	Demonstration,	Class
	issues and solutions through	exploratory	Assessments/Fina
	visualization and provide a holistic	discussion and	l Jury
	overview of urban design concepts.	feedback.	

	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 Typre: 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.

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

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 Typre: 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

Cour	se Outcomes (COs): at the end of	Teaching-	Assessment
the Co	ourse, the student will be able to -	Learning	Strategy
		Strategy	
CO1	Describe housing policy and	Class Lecture	Final Exam/Class
	Planning, community, legislations,		Test/Assignment
	housing paradigms, elements of		
	housing and its influence, housing		
	paradigms, human settlement,		
	housing framework, housing		
	choice, housing economics.		
CO2	Explain community in housing,	Class Lecture	Final Exam/Class
	housing policy, elements of	and exploratory	Test/Assignment
	housing, housing paradigms,	discussions	
	housing problems in Bangladesh,		
	housing delivery system; urban		
	space standards; housing		
	infrastructure, human settlement,		
	housing standards, and design		
	requirements, housing provision,		
	delivery system.		
CO3	Evaluate housing problems in	Class Lecture	Final Exam/Class
	Bangladesh, housing design	and exploratory	Test/Assignment
	policies and standards for different	discussions	
	income groups under different		
	markets and different political		
	regimes.		

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	\checkmark											
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

Cour	se Outcomes (COs): at the end of	Teaching-	Assessment
the Co	ourse, the student will be able to -	Learning	Strategy
		Strategy	
CO1	Explain one-way slab, two-way	Class Lecture	Final Exam/Class
	slab, flat slab, flat plate, waffle slab,	and exploratory	Test/Assignment
	ribbed slab, basic requirements to	discussions	
	design the structures and ultimate		
	strength design method.		
CO2	Analyze singly reinforced, doubly	Class Lecture	Final Exam/Class
	reinforced and T-beams for flexure	and exploratory	Test/Assignment
	using working stress design	discussions	
	method.		
CO3	Prepare preliminary design of	Class Lecture	Final Exam/Class
	beam, slab, flat slab, flat plate,	and exploratory	Test/Assignment
	waffle slab and ribbed slab.	discussions	
CO4	Design of singly reinforced, doubly	Class Lecture	Final Exam/Class
	reinforced and T-beams, one way	and exploratory	Test/Assignment
	and two way slabs for flexure using	discussions	
	working stress design method.		

	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 airconditioning; 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

Cour	se Outcomes (COs): at the end of	Teaching-	Assessment	
the Co	ourse, the student will be able to -	Learning	Strategy	
		Strategy		
CO1	Explain the basic concepts of air	Class Lecture	Final Exam/Class	
	conditioning, firefighting methods,	and exploratory	Test/Assignment	
	vertical transportation, incoming	discussions		
	and outgoing traffic handling,			
	escalators and moving ramps.			
CO2	Compare different types of air	Class Lecture	Final Exam/Class	
	conditioner, vertival transporation	and exploratory	Test/Assignment	
	systems and fire fighting systems.	discussions		
000			E' 1 E /01	
CO3	Design the cooling load, proper duct	Class Lecture	Final Exam/Class	
	system, vertical transportation and fire	and exploratory	Test/Assignment	
	fighting system for households,	discussions		
	offices, educational institutions etc.			

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

20.10. 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.

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

Manningof	Course Out	(COa)		$\mathbf{O}_{\mathbf{r}}$								
	Course Om	comes (CUS) to Program	Unicomes (PUS):								
mapping or	course out		,									
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
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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 yes	ar 2 nd semester			
Exam Hours: 0.00 CIE Marks: 100% SEE Marks: 0%					
Course Typre: 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; Concerened 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 evoluation 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

Cour	se Outcomes (COs): at the end of	Teaching-	Assessment	
the Co	burse, the student will be able to -	Strategy	Strategy	
CO1	Explain the duties and	Feedback and	Viva/	
	responsibilities of a practicing	Presentation	Examination	
	architect.			
CO2	Develop skills to adopt in an office	Feedback and	Viva/	
	environment, including project and	Presentation	Examination	
	Office management, and contract			
	administration.			
CO2	Compareto Design and Construction	Foodbook and	Vino/	
CUS	Generate Design and Construction	reeuback and	viva/	
	Documentation.	Presentation	Examination	

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

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

20.11. 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)	CREDIT: 9 (18 hrs/week) TERMS OFFERED: 5 th year 1 st semester					
Exam Hours: 0.00 CIE Marks: 100% SEE Marks: 0%						
Course Typre: 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								

Cour the Co	se Outcomes (COs): at the end of ourse, 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
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	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 Typre: 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 th	e Teaching-l	Learning ar	nd Assessment
Strategy						

Cour	se Outcomes (COs): at the end of	Teaching-	Assessment	
the Co	ourse, the student will be able to -	Learning	Strategy	
		Strategy		
CO1	Comprehend and distinguish the	Class Lecture	Final Exam/Class	
	cultural significance in respect to		Test	
	socio- economic, political and			
	environmental factors of heritage			
	sites to gain awareness.			
CO2	Apply contemporary tools,	Class Lecture	Final Exam/Class	
	techniques and methodology of	and exploratory	Test	
	conservation to formulate an	discussions		
	integrated solution and demonstrate			
	through verbal, written and visual			
	means.			
CO3	Distinguish the effective	Class Lecture	Final Exam/Class	
	conservation policy through	and problem	Test/Assignment	
	different national and international	solving		
	laws and improve the critical point			
	of view.			
CO4	Analyze the sustainability of	Class Lecture	Final Exam/Class	
	cultural heritage through disaster	and exploratory	Test/Assignment	
	risk management with the	discussions		
	knowledge of structure, material			
	and construction of historical			
	buildings.			

	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	h the	Teaching-Learning	and	Assessment
Strategy						

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

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 Typre: 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

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

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

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

20.12. 5th Year 2nd Semester

20.10.1 ARCH 5122

DEGREE PRO COUF COURS	DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 5122 COURSE TITLE: Design Studio X									
CREDIT: 9 (18 hrs/week)	CREDIT: 9 (18 hrs/week) TERMS OFFERED: 5 th year 2 nd semester									
Exam Hours: 0.00	CIE Marks: 100%	SEE Marks: 0%								
Course Typre: 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

Cour	se Outcomes (COs): at the end of	Teaching-	Assessment
the Co	ourse, the student will be able to -	Learning	Strategy
		Strategy	
CO1	Explain multiple theoretical,	Classroom	Class
	social, political, economic, cultural,	lecture, study	Assessments/
	and environmental contexts related	and analysis,	Final Jury
	to the problems and the need to act	exploratory	
	legally, ethically, and critically for	discussion, field	
	the good of the client, society, and	survey and	
	the public.	feedback.	
CO2	Apply a diverse range of	Demonstration,	Class
	professional principles and skills to	exploratory	Assessments/
	ponder and convey architectural		Final Jury

	ideas innovatively, sensibly and responsibly through appropriate presentation medium e.g., writing, speaking, drawing, and model making.	discussion and feedback.	
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

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

20.10.2 ARCH 5721

DEGREE PRO COUI COURSE TITI	DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 5721 COURSE TITLE: Professional Practice and Ethics								
CREDIT: 2 (2 hrs/week)	TERMS OFFERED: 5 th	^h year 2 nd semester							
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%							
Course Typre: Core Theory	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 constructiona 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						

Cour	se Outcomes (COs): at the end of	Teaching-	Assessment	
the C	ourse, the student will be able to -	Learning	Strategy	
		Strategy		
CO1	Explain the role of the Architect in	Class Lecture	Final Exam/Class	
	the building industry and process;	and exploratory	Test/Assignment	
	general conditions of owner-	discussions		
	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			
<u> </u>	respect with IAB and PPR.	~1 .		
CO2	Analyzing the construction	Class Lecture	Final Exam/Class	
	documents, bid documents; contract	and exploratory	Test/Assignment	
	documents, evaluation process of	discussions		
	contractors; IAB code of ethics and			
	professional conduct, the regulatory			
	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.			
CO3	Evaluate code of ethics and	Class Lecture	Final Exam/Class	
	professionalism, building code.	and exploratory	Test/Assignment	
	official correspondence,	discussions	Ũ	
	professional organizations in			
	professional field.			

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

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1												\checkmark

CO2							
CO3						\checkmark	

20.10.3 HSS 5621

DEGREE PRO COU COURSE TITLE	OGRAM: Bachelor of Arc RSE CODE: HSS 5621 Bangladesh Studies and	chitecture Government						
CREDIT: 2 (2hrs/week) TERMS OFFERED: 5 th year 2 nd semester								
Exam Hours: 3.00	CIE Marks: 30%	SEE Marks: 70%						
Course Typre: 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, fuctions, 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, 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	Assessment Strategy
	Strategy	

CO1	Describe the history of	Class Lecture	Final Exam/Class		
	Bangladesh through the ancient,	and exploratory	Test/Assignment		
	medieval, colonial and post-	discussions			
	colonial periods alignment with				
	form and structured of government				
CO2	Apply how the different	Class Lecture	Final Exam/Class		
	constitutional bodies and socio-	and exploratory	Test/Assignment		
	political government organs	discussions	-		
	rolling their behavior on				
	governance and people in				
	Bangladesh.				
CO3	Analyze the structural features of	Class Lecture	Final Exam/Class		
	the Bangladeshi history,	and exploratory	Test/Assignment		
	economy and patterns of	discussions			
	development processes and the				
	nature of administrative				
	challenges for good governance				
CO4	Evaluate the different perspective	Class Lecture	Final Exam/Class		
	in Bangladesh socioeconomic and	and exploratory	Test/Assignment		
	political culture and role of	discussions			
	government, administrational body				
	and government management				
	system				

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

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 PRO COUR COURSE TITLE: Adva	GRAM: Bachelor of Arc SE CODE: ARCH 1821 Inced Building Materials	chitecture 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.

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

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

	fabrication and construction of special building forms.											
Mapping of Course Outcomes (COs) to Pro							g <mark>ram (</mark>)utcon	nes (P	Os):		
	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	Teaching-	Assessment
the Course, the student will be able to -	Learning	Strategy
	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

	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) w	vith the	Teaching-Learnin	g and	Assessment
Strategy						

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

	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 alsohasthe 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

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

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

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	\checkmark											
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

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

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 PRO COUR COURS	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	Assessmen
Strategy									
-									

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

	functions, spatial scale and continuity.		
CO4	Distinguish different types of	Class Lecture	Final Exam/Class
	interior materials and finishes along	and exploratory	Test/ Assignment
	with cost estimation.	discussions	

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

21.1.7 ARCH 3811

DEGREE PRO COUR COURSE TITLE: Ed	GRAM: Bachelor of Arc SE CODE: ARCH 3811 ucational Facilities Planr	chitecture ning and Design					
CREDIT: 2.0 (2hrs/week)							
Exam Hours: 3.00CIE 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

Cou	rse Outcomes (COs): at the end of	Teaching-	Assessment
the (Course, the student will be able to -	Learning	Strategy
		Strategy	
CO1	Describe evolutionary development	Class Lecture	Final Exam/Class
	of educational facilities, elements	and exploratory	Test/ Assignment
	and classification of institutions,	discussions	
	influencing factors of educational		
	building designs, standards and		
	guidelines for planning and case		
	studies.		

CO2	Demonstrate building proce	ess,	Class	Lecture	Final Exam/Class
	building services, skills in relev	ant	and ex	ploratory	Test/ Assignment
	legislation and codes for design a	ind	discuss	ions	
	constructions.				
CO3	Appraise the key design criter	ria,	Class	Lecture	Final Exam/Class
	various technical and innovat	ive	and exploratory		Test
	issues for educational facilit	ies	discuss	ions	
	design.				
CO4	Evaluate environmenta	lly	Class	Lecture	Final Exam/Class
	sustainable construction techniq	and exploratory		Test/ Assignment	
	and materials.		discussions		

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

21.1.8 ARCH 3813

DEGREE PRO COUR COURSE	GRAM: Bachelor of Ar SE CODE: ARCH 3813 TITLE: Fire Safety De	chitecture 3 sign					
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

Cour	se Outcomes (COs): at the end of	Teaching-	Assessment
the C	ourse, the student will be able to -	Learning	Strategy
		Strategy	
CO1	Describe the physics and chemistry	Class Lecture	Final Exam/Class
	of fire, development and spread of	and exploratory	Test
	fire, fire detection systems, means	discussions	
	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.		
CO2	Explain different components of	Class Lecture	Final Exam/Class
	fire detection systems, means of	and exploratory	Test/ Assignment
	summoning the fire brigade, escape	discussions	
	and evacuation procedure,		
	firefighting tools and techniques,		
	national and international		
	legislations, codes and guidelines		
	for fire safety, protection and		
	control.		
CO3	Evaluate national and international	Class Lecture	Final Exam/Class
	firefighting rules and guidelines in	and exploratory	Test
	practice, fire detection systems,	discussions	
	components, evacuation procedure,		
	fire fighting tools and techniques		
	and legislation, code and guidelines		
	for fire protection, safety and		
	control.		

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)	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: 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.

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

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

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

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	\checkmark											
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 PRO COU COURSE TITLE: U	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-pubic housing with particular references- urban problem- poverty, migration, unemployment, pollution.

Definition and theories and their relevance to social set –up social structureorganization- 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

Cour	se Outcomes (COs): at the end of	Tea	ching-	Assessment		
the Co	ourse, the student will be able to -	Lea	rning	Strategy		
		Stra	ategy			
CO1	Describe general history of urban	Class	Lecture	Final Exam/Class		
	socio-economic development and	and	problem	Test/ Assignment		
	apply them to different aspects of	solving				
	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					

CO2	Apply logical and argumentum	Class Lecture	Final Exam/Class
	frameworks and theory to choose	and problem	Test/ Assignment
	right way of living in city or in	solving	
	urban area.		
CO3	Analyze how the experience of	Class Lecture	Final Exam/Class
	living in cities differs for different	and problem	Test/ Assignment
	groups based on their race,	solving	
	ethnicity, social class and level of		
	capacity; based on social values and		
	economic behavior of people		
CO4	Evaluate the socio-economic	Class Lecture	Final Exam/Class
	problems and possibilities and	and problem	Test/ Assignment
	solve them in logical and rational	solving	
	views.		

	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 t	the	Teaching-Learning	and	Assessment
Strategy							

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

	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

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

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 tools 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

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

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 PRO COURSE COURSE TITLE: I	GRAM: Bachelor of Ar CODE: ARCH 5813 ndustrial Building Planni	chitecture ing 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

Cour	se Outcomes (COs): at the end of	Teaching-	Assessment
the Co	ourse, the student will be able to -	Learning	Strategy
		Strategy	
CO1	Describe historical development	Class Lecture	Final Exam/Class
	and classification of industrial	and exploratory	Test/Assignment
	buildings; site development and	discussions	
	master planning; traffic impact,		
	environmental impact, working		
	conditions; criteria for design;		
	LEED certification, machinery		
	layout, environmental control;		
	services; fire safety, signage,		
	legislation, and codes.		
CO2	Analyze site development and	Class Lecture	Final Exam/Class
	master planning; traffic impact,	and exploratory	Test/Assignment
	environmental impact, working	discussions	
	conditions; criteria for design;		
	LEED certification, Machinery		
	layout, environmental control;		
	services; fire safety, signage,		
~~~	legislation, and codes.	~1 .	
CO3	<b>Evaluate</b> criteria for overall design,	Class Lecture	Final Exam/Class
	fire protection and safety measures,	and exploratory	Test/Assignment
	legislation, and codes.	discussions	

Mapping of Course Outcomes	(COs) to Program	<b>Outcomes (POs):</b>
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	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	PO8	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												

# 21.2.6 ARCH 5815

<b>DEGREE PROGRAM:</b> Bachelor of Architecture
COURSE CODE: ARCH 5815
<b>COURSE TITLE:</b> 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	<b>Teaching-Learning</b>	and	Assessment
Strategy								

Cour	se Outcomes (COs): at the end of	Teaching-	Assessment
the Co	ourse, the student will be able to -	Learning	Strategy
		Strategy	
CO1	<b>Explain</b> the basic concepts,	Class Lecture	Final Exam/Class
	concerns, principles, and practices	and exploratory	Test/Assignment
	in planning and designing a	discussions	
	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.		
CO2	Analyze architectural plans in	Class Lecture	Final Exam/Class
	relation to hospital activities and	and exploratory	Test/Assignment
	functions.	discussions	
CO3	<b>Formulate</b> an evaluator's checklist	Class Lecture	Final Exam/Class
	for the planning and design of a new	and exploratory	Test/Assignment
	hospital or expansion, modification	discussions	
	and retrofitting of an existing one.		

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

	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	<b>PO8</b>	PO9	PO10	PO11	PO12
CO1	$\checkmark$											
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)	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

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

	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	PO8	PO9	PO10	PO11	PO12
<b>CO1</b>												
CO2												
<b>CO3</b>												
<b>CO4</b>												

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

# 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.

Cour	se Outcomes (COs): at the end of	Teaching-	Assessment	
the Co	ourse, the student will be able to -	Learning	Strategy	
		Strategy		
CO1	Describe types and cause of	Class Lecture	Final Exam/Class	
	disasters, principles of disaster risk	and exploratory	Test/ Assignment	
	management, preparedness	discussions		
	planning and management practices			
	in Bangladesh and all over the			
	world.			
CO2	<b>Compare</b> spectrum of hazard	Class Lecture	Final Exam/Class	
	reduction measures, methods and	and exploratory	Test/ Assignment	
	techniques that can and should be	discussions		
	employed for mitigation,			

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

	preparedness, response and		
	recovery.		
CO3	Analyze disaster preparedness	Class Lecture	Final Exam/Class
	planning, emergency rescue and	and exploratory	Test/ Assignment
	relief needs, long term recovery	discussions	
	needs, community level resilience		
	and method of building safer		
	buildings in Bangladesh and all		
	over the world.		
CO4	Recommend adaptive settlement	Class Lecture,	Final Exam/Class
	and build form planning for	and exploratory	Test/ Assignment
	mitigation and recovery of disasters	discussions	
	in disaster prone areas of		
	Bangladesh.		

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

	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	PO10	PO11	PO12
CO1												
CO2												
CO3												
<b>CO4</b>												

#### 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 Typre: 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	<b>Course Outcomes</b>	(COs) with	n the	<b>Teaching-Learning</b>	and	Assessment
Strategy						

Cours	se Outcomes (COs): at the end of the ourse, the student will be able to -	Teaching- Learning Strategy	Assessment Strategy
CO1	<b>Apply</b> different sketching methods and techniques to create compositions.	Class Lecture and demonstration	Class Assessments
CO2	<b>Interpret</b> 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	<b>Appraise</b> 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	<b>Create</b> compositions meant to communicate specific ideas.	Drawing, sketching and feedback	Class Assessments

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

	0			(	,	C	,		(	,		
	<b>PO1</b>	PO2	PO3	<b>PO4</b>	PO5	PO6	<b>PO7</b>	<b>PO8</b>	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									
<b>CREDIT:</b> 1.5 (3hrs/week)									
Exam Hours: 0.00	<b>CIE Marks:</b> 100%	SEE Marks: 0%							
Course Typre: Optional Sessional	<b>Pre-requisites:</b> N/A	<b>Co-requisites:</b> 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

Cour	se Outcomes (COs): at the end of	Teaching-	Assessment
the Co	ourse, the student will be able to -	Learning	Strategy
		Strategy	
CO1	<b>Describe</b> 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	<b>Apply</b> various tools and techniques of photography and digital printing.	Class Lecture, demonstration, photo walk, exercise and feedback	Class Assessments
CO3	<b>Develop</b> 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	<b>PO7</b>	<b>PO8</b>	PO9	PO10	PO11	PO12
CO1												
CO2												
<b>CO3</b>												

# 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	<b>CIE Marks:</b> 100%	SEE Marks: 0%								
Course Typre: Optional Sessional	<b>Pre-requisites:</b> N/A	<b>Co-requisites:</b> 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 Modelling, hyper realistinc 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

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

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

	0			(	,	/ 0							
	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	PO8	PO9	PO10	PO11	PO12	
CO1									$\checkmark$				
CO2													
CO3									$\checkmark$				

#### 21.3.4 ARCH 2814

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

**Rationale of Course:** The main objective of the course is to study and analyze threedimensional 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

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

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

	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	PO8	PO9	PO10	PO11	PO12
CO1												
CO2		$\checkmark$										
CO3		$\checkmark$										

# 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%
<b>Course Typre:</b> Optional Sessional	<b>Pre-requisites:</b> N/A	<b>Co-requisites:</b> N/A

**Course Typre:** 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	<b>Course Outcomes</b>	(COs) w	with the	<b>Teaching-Learning</b>	and	Assessment
Strategy						

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

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

	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	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	<b>CIE Marks:</b> 100%	SEE Marks: 0%
Course Typre: Optional Sessional	<b>Pre-requisites:</b> N/A	<b>Co-requisites:</b> N/A

**Rationale of Course:** The main objective of the course is to undersand 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

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

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

	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	<b>PO8</b>	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)	CREDIT: 1.5 (3 hrs/week)						
Exam Hours: 0.00 CIE Marks: 100% SEE Marks: 0%							
Course Typre: 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 excercises. 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

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

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

	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	<b>PO8</b>	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	<b>CIE Marks:</b> 100%	SEE Marks: 0%					
Course Typre: 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	<b>Teaching-Learni</b>	ng and	Assessment
Strategy								

Cour	se Outcomes (COs): at the end of	Teaching-	Assessment
the Co	ourse, the student will be able to -	Learning	Strategy
		Strategy	
CO1	<b>Develop</b> skills to produce the	Demonstration,	Class
	working drawings and details of	architectural	Assessments/Fina
	different building types through	drafting,	1 Presentation
	understanding of codes, by- laws	exploratory	
	and other regulations.	discussion and	
		feedback.	
CO2	<b>Produce</b> detailed architectural	Demonstration,	Class
	working drawings of individual	architectural	Assessments/Fina
	building components (i.e., wall,	drafting,	1 Presentation
	floor, roof, door, window, stair,	exploratory	
	elevators and escalators) and spaces	discussion and	
	(i.e., kitchen and toilets).	feedback.	
CO3	Prepare complete construction	Demonstration,	Class
	documents and RAJUK drawing	architectural	Assessments/Fina
	booklet.	drafting,	1 Presentation
		exploratory	
		discussion and	
		feedback.	

	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	PO8	PO9	PO10	PO11	PO12
CO1			$\checkmark$									
CO2												
CO3												

# 21.3.9 ARCH 3824

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 3824 COURSE TITLE: Product Design							
<b>CREDIT:</b> 1.5 (3 hrs/week)							
Exam Hours: 0.00 CIE Marks: 100% SEE Marks: 0%							
Course Typre: 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

Cour	se Outcomes (COs): at the end of	<b>Teaching-</b>	Assessment
the Co	ourse, the student will be able to -	Learning	Strategy
		Strategy	
CO1	<b>Distinguish</b> information and data	Classroom	Class
	related to a particular product and	lecture, study	Assessments/
	perceive designer's role and users'	and analysis,	<b>Final Presentation</b>
	perspective.	exploratory	
		discussion and	
		feedback.	
CO2	<b>Experiment</b> with visual properties	Demonstration,	Class
	of materials, manufacturing	exploratory	Assessments/
	mechanisms, technical supports in a	discussion and	<b>Final Presentation</b>
	particular contextual and	feedback.	
	environmental implications.		
CO3	Evaluate the real life needs and	Demonstration,	Class
	solutions through sketching, model	exploratory	Assessments/
	making, prototyping techniques and	discussion and	<b>Final Presentation</b>
	computer-aided design.	feedback.	
CO4	<b>Design</b> a product from	Demonstration,	Class
	conceptualization to materiality.	exploratory	Assessments/
		discussion and	<b>Final Presentation</b>
		feedback.	

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

	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	<b>PO8</b>	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												
<b>CO4</b>												

# 21.3.10 CE 3012

DEGREE PROGE COURS COURSE TITLE: Buildin	DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: CE 3012 COURSE TITLE: Building Materials and Construction Workshop							
CREDIT: 1.5 (3 hrs/week)	<b>CREDIT: 1.5</b> (3 hrs/week)							
Exam Hours: 0.00 CIE Marks: 100% SEE Marks								
Course Typre: 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

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

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

	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	<b>PO8</b>	PO9	PO10	PO11	PO12
CO1												
CO2												
<b>CO3</b>												

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	<b>CIE Marks:</b> 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

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

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

	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	PO8	<b>PO9</b>	PO10	PO11	PO12
CO1												
CO2												
<b>CO3</b>												
<b>CO4</b>												

# 21.4. Elective Sessional Courses: Set- B

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

# 21.2.12 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 Typre: 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

Cour	se Outcomes (COs): at the end of	Teaching-	Assessment
the Co	ourse, the student will be able to -	Learning	Strategy
		Strategy	
CO1	<b>Explain</b> the practical application of	Class lecture,	Class
	the theoretical concepts related to	study, analysis,	Assessments/
	field survey in the assigned site.	discussion, field	<b>Final Presentation</b>
		survey and	
		feedback.	
CO2	Choose appropriate surveying	Demonstration,	Class
	instruments to correctly operate the	discussion, field	Assessments/
	survey considering climate, built	survey and	Final Presentation
	environment and historic	feedback.	
	preservation.		
CO3	Discover architectural details and	Demonstration,	Class
	solve practical problems within	discussion, field	Assessments/
	sites.	survey and	Final Presentation
		feedback.	
CO4	Interpret accurate architectural	Demonstration,	Class
	drawings such as site plans,	discussion and	Assessments/
	elevations and sections after field	feedback.	<b>Final Presentation</b>
	survey.		

	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	PO8	PO9	PO10	PO11	PO12
CO1				$\checkmark$								
CO2												
CO3												
<b>CO4</b>												

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

# 21.2.13 ARCH 4814

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

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

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

	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	<b>PO8</b>	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												
CO4												

# 21.2.14 ARCH 4822

DEGREE PROG COURS COURSE TITLE: Clim	<b>RAM:</b> Bachelor of Arch E <b>CODE:</b> ARCH 4822 natic Design, Modeling a	nitecture		
CREDIT: 1.5 (3 hrs/week)				
Exam Hours: 0.00	<b>CIE Marks:</b> 100%	SEE Marks: 0%		
Course Typre: Optional Sessional	<b>Pre-requisites:</b> 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	<b>Course Outcomes</b>	(COs) with	h the	<b>Teaching-Learning</b>	and	Assessment
Strategy						

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

	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	PO8	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												

# 21.2.15 ARCH 4824

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

Cour	se Outcomes (COs): at the end of	Teaching-	Assessment
the Co	ourse, the student will be able to -	Learning Strategy	Strategy
CO1	<b>Design</b> an interior space aesthetically and pragmatically.	Demonstration, exploratory discussion, field survey (Optional) and feedback.	Class Assessments/ Final Presentation
CO2	<b>Facilitate</b> an interior space with contemporary electro-mechanical equipment.	Demonstration, exploratory discussion, field survey (Optional) and feedback.	Class Assessments/ Final Presentation
CO3	<b>Choose</b> 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	<b>Produce</b> 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	<b>PO7</b>	<b>PO8</b>	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												
<b>CO4</b>												

# 21.2.16 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 Typre: 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 C	ourse Outcomes	(CUS)	with i	tne	Teaching-Le	arning	and	Assessment
Strategy								

Cour	se Outcomes (COs): at the end of	Teaching-	Assessment
the Co	ourse, the student will be able to -	Learning	Strategy
		Strategy	
CO1	Identify data about a specific site in	Demonstration,	Class
	the development of a design	study and	Assessments/
	response, with particular attention	analysis,	Final Presentation
	to topography, landscape character,	exploratory	
	users, sensory information and	discussion, field	
	climate.	survey	
		(Optional) and	
		feedback.	
CO2	Apply fundamental design	Demonstration,	Class
	principles e.g., primary elements,	study and	Assessments/
	composition of form and space,	analysis,	Final Presentation
	proportion and scale, ordering	exploratory	
	principles.	discussion and	
		feedback.	

COL	Design and heating in a studie	Democratica	Class
CO3	<b>Design</b> productively in a studio	Demonstration,	Class
	environment and, in turn, develop	study and	Assessments/
	inter-personal skills, verbal	analysis,	<b>Final Presentation</b>
	communication skills through small	exploratory	
	group activities and formative	discussion and	
	studio exercises.	feedback.	
CO4	<b>Communicate</b> critical design	Demonstration,	Class
	thinking according to disciplinary	study and	Assessments/
	conventions; drawings, models and	analysis,	<b>Final Presentation</b>
	graphics.	exploratory	
		discussion and	
		and abbioin and	

	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	<b>PO8</b>	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3			$\checkmark$			$\checkmark$			$\checkmark$			
CO4												

# 21.2.17 ARCH 4828

DEGREE PROGRAM: Bachelor of Architecture COURSE CODE: ARCH 4828							
<b>COURSE TITLE:</b> Building Int	formation Modelling in A	Architectural Practice					
CREDIT: 1.5 (3 hrs/week)							
Exam Hours: 0.00 CIE Marks: 100% SEE Marks: 0%							
Course Typre: 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

Cour	se Outcomes (O	COs): at the	Teac	hing-	Assessment	
the Course, the student will be able to -				Lear	ning	Strategy
			Stra	tegy		
CO1	Explain	critical	aspects,	Classroo	om	Class
	consciousness	and	critique	lecture,	study	Assessments
	behaviors	towards	BIM	and	analysis,	

	implementation in educational and	exploratory	
	practical field of architecture.	discussion,	
		demonstration.	
CO2	<b>Design</b> different components,	Classroom	Class
	systems or processes to meet	demonstration,	Assessments/
	desired needs or intents and solve	hands- on	Final Presentation
	architectural problems through the	exercises and	
	use of BIM technology.	feedback.	
CO3	Prepare detail scheduling and the	Classroom	Class
	construction cost through BIM.	demonstration,	Assessments/
		hands- on	Final Presentation
		exercises and	
		feedback.	

	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	<b>PO8</b>	PO9	PO10	PO11	PO12
CO1	$\checkmark$											
CO2												
CO3												

# 21.2.18 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 Typre: 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	<b>Course Outcomes</b>	(COs) with	the	<b>Teaching-Learning</b>	and	Assessment
Strategy						

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

	PO1	PO2	PO3	<b>PO4</b>	PO5	PO6	<b>PO7</b>	<b>PO8</b>	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3		$\checkmark$										

# 21.2.19 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)	<b>CREDIT: 1.5</b> (3 hrs/week)						
Exam Hours: 0.00 CIE Marks: 100% SEE Marks: 0%							
Course Typre: 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 emPOyed in mapping, planning, policy, management and development; visual explanations provided by computer and by-hand applications; lecture and labratory 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.

Cour the C	rse Outcomes (COs): at the end of course, the student will be able to -	Teaching- Learning Strategy	Assessment Strategy
CO1	<b>Identify</b> 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	<b>Employ</b> theory and different techniques in visual methods to develop dynamic relationship.	Demonstration, exploratory discussion and feedback.	Class Assessments/ Final Presentation
CO3	<b>Analyze</b> 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	<b>Demonstrate</b> different types of graphical presentation, photo documentation to communicate visually.	Demonstration, exploratory discussion and feedback.	Class Assessments/Fina 1 Presentation

Mapping	Course	Outcomes	(COs)	with	the	<b>Teaching-Learni</b>	ng and	Assessment
Strategy								

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

	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	<b>PO8</b>	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												
CO4												
CO5												

## 21.2.20 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 Typre: Optional Sessional	<b>Pre-requisites:</b> N/A	<b>Co-requisites:</b> 5122	ARCH-					

**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.

Cour	se Outcomes (COs): at the end of the	Teaching-	Assessment
C	ourse, the student will be able to -	Learning	Strategy
		Strategy	
CO1	Formulate research topic, research	Study, analysis,	Class
	questions, aims, objectives and	exploratory	Assessments
	appropriate methods for complex	discussion and	/Final
	architectural problems.	feedback	Presentation
CO2	<b>Prepare</b> literature synthesis on a	Study, analysis,	Class
	coherent issue from a wide range of	exploratory	Assessments
	research papers, journals, and books.	discussion and	/Final
		feedback	Presentation
CO3	Develop skills in producing annotated	Study, analysis,	Class
	notes, bibliographies, and tracking	exploratory	Assessments
	publication sources, lineages in	discussion and	/Final
	academic thought and proficiency on	feedback	Presentation
	how to present large bodies of academic		
	writings in a systematic way.		

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

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

	PO1	PO2	PO3	PO4	PO5	PO6	<b>PO7</b>	<b>PO8</b>	PO9	PO10	PO11	PO12
CO1												
CO2												
CO3												

# Appendices

# **Appexdix-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 in 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 centre 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 programmes 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 knowledgebased 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 centre with a number of medical officers and supporting staffs within prescribed limits. Medical centre 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 centre 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, EmPOyees are given only free prescription and disease related valuable advice about various kinds of diseases in the medical centre. All kinds of minor operations are performed under local anesthesia in the medical centre. Medical centre 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 centre 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, Directories, 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)
- 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 asB. 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.

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

#### ALTERNATIVE: I

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,		09
including one 8-week Short Semester.		
	Total =	52

⁴ 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
  - i. he/she is considered academically weak,
  - ii. number of credits required for graduation is less than 15 in that semester,
  - iii. 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 prerequisite 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 constrains 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 readmission 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 ( $\Box$  CiGi) accumulated up to the date by the total credit hours ( $\Box$  Ci).

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 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) obtain	ed 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:

Attendance	Percentage of Marks
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.

0	11
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 pr	rescribed in the 1st Year 2nd Semester
T2 = total credits pr	rescribed up to 2nd Year 2nd Semester
T3 = total credits pr	rescribed up to 3rd Year 2nd Semester
T4 = total credits pr	rescribed 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:

Vice-Chancellor	Chairman
Pro-Vice-Chancellor	Member
Respective Dean/Deans (As per acused student/students	) Member
Respective Head/Heads (As per acused student/students	) Member
Respective Provost/Provosts of Halls of Residence	Member
(As per acused student/students)	
Director (Students' Welfare) Membe	r Secretary
	Vice-Chancellor Pro-Vice-Chancellor Respective Dean/Deans (As per acused student/students Respective Head/Heads (As per acused student/students Respective Provost/Provosts of Halls of Residence (As per acused student/students) Director (Students' Welfare) Member

- 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 emPOyees 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 misbehaviour towards the emPOyees 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	Academic Council
	ii)	Imposing fine,	
	iii)	Suspension from Halls/University	
		for any length of time and	
	iv)	Expulsion from Halls/University	
		for good.	
Vice-Chancellor	i)	Warning	Board of
	ii)	Imposing fine and	Discipline
	iii)	Suspension up to 2 (two) years	
		from Halls/University	
	iv)	Expulsion from the Hall for good.	
Head of Department	i)	Warning and	Director
(On students of his	ii)	Imposing fine up to Tk. 1000/-	
Department)			
Director of Students'	i)	Warning	Vice-Chancellor
Welfare	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.	
Provosts (on resident or	i)	Warning	Director of
attached students of his	ii)	Imposing fine up to Tk. 500/- and	Students' Welfare
Hall of residence)	iii)	Suspension from the Hall for a	
		period of up to 2 (two) years	

*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 it 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.

	Bachelor in Architecture,		Diplom	a-in-Engineering (Are	chitecture
	DUET		technology)		
S1.	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		66435	Fundamental surveying	3
	1011 CE	Construction Process Surveying	66446	Fundamental construction process	4
5	1013 CE		((11)		1
3	CE 1015	Building Materials	00112	Architectural Materials	1
6	HSS 1811	Economics and Sociology	65811	Social science (Economics)	1

# **Appendix-4: Details of Exempted Courses**

	Bachelo DUET	or in Architecture,	Diploma-in-Engineering (Architecture and Interior Design technology)		
S1.	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	Surveying and	66446	Fundamental Construction Process	4
	1013 CE 1011	Construction Method Construction Process	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,		Diploma-in-Engineering			
	DUET		Civil Technology			
Sl.	Course Code	Course Title	Course Code	Course Title	Semester	
1	CE	Cost Estimation	66442	Estimating and Costing-1	4	
	1012	Cost Estimation	66455	Estimating and Costing- II	5	
2	CE	Computer Aided	66443	Civil Engineering Drawing-2 (CAD)	4	
2	1014	Drawings	66464	Civil Engineering Drawing -3 (CAD)	6	
3	CE 1011	Construction Process	68873	Construction Management and Documentation	7	
			66432	Surveying-1	3	
			66444	Surveying-2	4	
1	CE		66452	Surveying-3	5	
4	1013	Surveying	66461	Advance Surveying	6	
	1015		66433	Construction Process-1	3	
			66451	<b>Construction Process-2</b>	5	
5	CE 1015	Building Materials	66421	Civil Engineering Materials	1	
6	HSS 1811	Economics and Sociology	65811	Social Science	3	

	Bachelo DUET	or in Architecture,	Diploma-in-Engineering Civil (wood) Technology			
S1.	Course Code	Course Title	Course Code	Course Title	Semester	
1	CE	Cost Estimation	66442	Estimating and costing -1	4	
1	1012	Cost Estimation	66455	Estimating and Costing -2	5	
2	CE	Computer Aided	66443	Civil Engineering Drawing-2	4	
2	1014 Drawings		66464	Civil Engineering Drawing-3 (CAD)	6	
	CE		66433	Construction Process -1	3	
3	1011 CE 1013	Construction Process Surveying	66451	Construction Process-2	5	
			66432	Surveying -1	3	
4	CE		66444	Surveying -2	4	
	1013		66452	Surveying -3	5	

		Surveying and Construction Method	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:

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 1st Semester (Exempted)

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

## • 1st Year 2nd Semester

* 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
Opti	onal Courses			
0	ARCH-2611: Art Appreciation	2.0	ARCH 2815: Art Appreciation	2.0
9.	ARCH-2811: Ecology	2.0	ARCH 3311: Ecology	2.0

S1. 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
Opti	onal Courses			
7	ARCH-2222: Sculpture and Graphic Art	2.0	Nil *	
/.	CE-2022: Building Materials & Construction Workshop	2.0	CE 3012: Building Materials and Construction Workshop	1.5

## • 2nd Year 2nd Semester

* 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
Opti	onal 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	15	ARCH 4824: Interior Design	1.5
۷.	Studio	1.5	Studio	
3	ARCH-3521: Contemporary	2.0	ARCH 3511: Modern and	2.0
5.	Architecture		Contemporary Architecture	
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	2.0	ME 4511: Mechanical	2.0
0.	Equipments		Equipments	
Optional Courses				
	ARCH-3623: Interior Design		ARCH 2823: Interior Design	2.0
7.	Hum-3621: Urban Economics & Urban Sociology	2.0	HSS 3621: Urban Economics and Urban Sociology	2.0

## • 4th Year 1st Semester

S1. 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	2.0	ARCH 4511: Architecture of	2.0
	Bengal-II		Bengal	
3.	ARCH-4523: Architectural	2.0	ARCH 5411: Architectural	2.0
	Conservation		Conservation	
4.	CE-4121: Structure -VI	2.0	CE 5111: Structure VI	2.0
Optional Courses				
6.	ARCH-4421: Sustainable	2.0	ARCH 2821: Energy Efficient	2.0
	Design		Building Design	2.0
	ARCH-4423: Vernacular		ARCH 3821: Vernacular	2.0
	Architecture & Settlements		Architecture and Settlements	

## • 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	2.0	ARCH 5811: Research	2.0	
5.	Methodology	2.0	Methodology	2.0	
4.	Hum-5611:Project	2.0	HSS 5611: Project Management	2.0	
	Management & Accounting		and Accounting		

# • 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	2.0	ARCH 5721: Professional	2.0
	Practice		Practice and Ethics	

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