Department of Architecture

Syllabus 2014-2015

First Year: *Semester I*

Course No.	Course Title	*Hours/Week* Theory + Lab/Studio	Credit	Prerequisite Courses
ARC 111	Art and Architecture I (Ancient Civilizations)	2 + 0	2+0	-
ARC 112	Design Studio I	0 + 9	0 + 4.5	-
ARC 119	Aesthetics and Design	2 + 0	2 + 0	-
ARC 114	Architectural Graphics I	0 + 6	0 + 3	-
ENG 101A	English Language	2 + 0	2 + 0	-
ENG 102A	English Language (Lab & Viva-Voce)	0 + 2	0 + 1	-
MAT 101A	Mathematics	2 + 0	2 + 0	-
PHY 111A	Physics for Architects	2 + 0	2 + 0	-
	Total	**10 + 17 = 27**	**10+8.5=18.5**	

First Year: *Semester II*

Course No.	Course Title	*Hours/Week* Theory + Lab/Studio	Credit	Prerequisite Courses
ARC 121	Art and Architecture II (Medieval Civilizations)	2 + 0	2 + 0	-
ARC 122	Design Studio II	0 + 9	0 + 4.5	ARC 112
ARC 123	ED I: Climate and Design	2 + 0	2 + 0	-
ARC 124	Architectural Graphics II	0 + 6	0 + 3	ARC 114
ARC 126	Computer Application I	0 + 3	0 + 1.5	-
ECO 105A	Principles of Economics	3 + 0	3 + 0	-
Optional-I (to be selected from the Following)				
ARC 125	Art Appreciation	2 + 0	2 + 0	
ARC 127	Ecology & Environment	2 + 0	2 + 0	
	Total	**11 + 18 = 29**	**11+9=20**	

Second Year: *Semester I*

Course No.	Course Title	*Hours/Week* Theory + Lab/Studio	Credit	Prerequisite Courses
ARC 211	Art and Architecture III (South Asian Civilizations)	2 + 0	2+0	-
ARC 212	Design Studio III	0 + 12	0+6	ARC 122
ARC 213	Basic Physical Planning	2 + 0	2+0	-
ARC 214	Computer Application II	0 + 6	0+3	-
ARC 215	Building and Finish Material	2 + 0	2+0	-
ARC 217	ED II: Visual and Sonic Environment	2 + 0	2+0	-
CEE 207A	Structure I - Mechanics	2 + 0	2+0	-
Optional-II (to be selected from the Following)				
ARC 219	Disaster Management	2+0	2+0	
BUS 201A	Accounting	2+0	2+0	
	Total	**14 + 18 = 32**	**14+9=23.0**	

Second Year: *Semester II*

Course No.	Course Title	*Hours/Week* Theory + Lab/Studio	Credit	Prerequisite Courses
ARC 221	Art and Architecture IV (Modern)	2 + 0	2+0	-
ARC 222	Design Studio IV	0 + 12	0+6	ARC 212
ARC 223	Construction Methods and Details	2 + 0	2+0	-
ARC 224	Photography and Graphic Reproduction	0 + 3	0+1.5	-
ARC 226	Graphic Art and Sculpture	0 + 3	0+1.5	-
ARC 228	Field Work (Contemporary)	7 days	0+1	-
SOC 101A	Sociology	2 + 0	2+0	-
CEE 209A	Structure II - Basic Mechanics of Solids	2 + 0	2+0	-

Optional-III (to be selected from the Following)				
ARC 225	ED III: Climate and Design II	2 + 0	2+0	
ARC 227	Philosophy	2 + 0	2+0	
	Total	**12 + 18 = 30 + 7 days**	**12+10=22.0**	

Third Year: *Semester I*

Course No.	**Course Title**	*Hours/Week* **Theory + Lab/Studio**	**Credit**	**Prerequisite Courses**
ARC 311	Art and Architecture V (Contemporary)	2 + 0	2+0	-
ARC 312	Design Studio V	0 + 12	0+9	ARC 222
ARC 314	Working drawing I (Construction)	0 + 6	0+3	-
CEE 303A	Building Services I: Plumbing	2 + 0	2+0	-
CEE 305A	Structure III - Mechanics of Solids	2 + 0	2+0	-
IPE 315A	Building services II - Mechanical	2 + 0	2+0	-
	Optional-IV (to be selected from the Following)			
SOC 214A	Social Psychology	2 + 0	2+0	-
ARC 313	Vernacular Architecture and Settlements	2 + 0	2+0	
	Total	**12 + 18 = 30**	**12+12=24.0**	

Third Year: *Semester II*

Course No.	**Course Title**	*Hours/Week* **Theory + Lab/Studio**	**Credit**	**Prerequisite Courses**
ARC 321	Art and Architecture VI (Bengal)	2 + 0	2+0	-
ARC 322	Design Studio VI	0 + 12	0+9	ARC 312
ARC 323	Urban Design	2 + 0	2+0	-
EEE 305A	Building Services III - Electrical	2 + 0	2+0	-
CEE 307A	Structure IV - Steel and Timber Structure	2 + 0	2+0	-
ARC 324	Field Work (Bengal)	7 days	0+1	
	Optional-V (to be selected from the Following)			
ARC 325	Working drawing II (Production)	0 + 6	0+3	-
CEE 304A	Construction Material Lab	0 + 6	0+3	
CEE 309A	Cost Estimation & Specification	0 + 6	0+3	
	Total	**8 + 30 = 38 + 7days**	**8+19=27.0**	

Fourth Year: *Semester I*

Course No.	**Course Title**	*Hours/Week* **Theory + Lab/Studio**	**Credit**	**Prerequisite Courses**
ARC 412	Design Studio VII	0 + 15	0+12	ARC 322
ARC 413	Interior Design	2 + 0	2+0	-
ARC 414	Interior Design Studio	0 + 3	0+1.5	-
ARC 415	Housing	2 + 0	2+0	
CEE 403A	Structure V - Reinforced Concrete Design	2 + 0	2+0	-
	Optional-VI (to be selected from the Following)			-
ARC 417	Sustainable Architecture	2 + 0	2+0	
ARC 419	Architectural Conservation	2 + 0	2+0	
	Total	**10 + 18 = 28**	**10+13.5=23.5**	

Fourth Year: *Semester II*

Course No.	**Course Title**	*Hours/Week* **Theory + Lab/Studio**	**Credit**	**Prerequisite Courses**
ARC 422	Design Studio VIII	0+15	0+12	ARC 412
ARC 423	Landscape Design	2+0	2+0	-
ARC 424	Landscape Design Studio	0+3	0+1.5	-
CEE 405A	Structure VI - Elements of Building Structure	2+0	2+0	-
ARC 426	Professional Training	4 weeks	0+2	
	Total	**4 + 18 = 22 + 4 weeks**	**4+15.5=19.5**	

Fifth Year: *Semester I*

Course No.	Course Title	*Hours/Week* Theory + Lab/Studio	Credit	Prerequisite Courses
ARC 511	Survey Technique and Analytic Method	2+0	2+0	-
ARC 512	Design Studio IX	0+18	0+15	ARC 422
ARC 514	Seminar	0+3	0+1.5	-
	Optional-VII (to be selected from the Following)			
CEE 501A	Project Management	2+0	2+0	
ARC 513	Architectural Programme formulation	2+0	2+0	
	Total	**6 + 21 = 27**	**6+16.5=22.5**	

Fifth Year: *Semester II*

Course No.	Course Title	*Hours/Week* Theory + Lab/Studio	Credit	Prerequisite Courses
ARC 521	Professional Practice	2+0	2+0	-
ARC 522	Design Studio X - Thesis	0+18	0+15	ARC 512
ARC 524	Dissertation - Thesis	0+6	0+3	ARC 512
	Total	**2 + 24 = 26**	**2+18=20.0**	

Credit requirement for B.ARCH degree at SUST is 200

Detailed Syllabus

ARC 111 ART AND ARCITECTURE I (Ancient Civilizations)
2 Hours/Week, 2 Credits

Part-A: Overview of the perceptual process of evolution in the Art and Architecture of ancient civilizations. Critical evaluation of ancient architecture and settlement design of Egyptian, Mesopotamian (Sumerian and Assyrian), Persian, Meso-American, Aegean, Etruscan, Chinese, Japanese and Indus Valley Civilizations.

Part-B: Introduction to classical architecture of Greece and Rome; Critical evaluation of the classical Architecture of Greece and Rome from political, social and philosophical point of view. Study of the potentiality of classical architecture in formation of the ordering principles.Critical evaluation of Architecture of Vedic and Buddhist civilizations political, social and philosophical point of view.

Reference:

Fletcher.B A History of Architecture, Architectural Press; 20 edition (21 Sep 1996)
Fazio.M A World History of Architecture, Publisher**:** McGraw-Hill Professional; 2nd Rev ed.
Cole.E The Grammar of Architecture, Bulfinch

ARC 112 DESIGN STUDIO I
9 Hours/Week, 4.5 credits

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.Study of scale, order, balance, proportion, Rhythm, axis, solid-void relationship, symmetry, movement, flexibility, harmony, hierarchy, datum etc. in various media.Introduction of colour schemes.Understanding of forms in nature; Study of nature to understand the basic principles of design.

ARC 114 ARCITECTURAL GRAPHICS I
6 Hours/Week, 3 Credits.

Line drawing quality; Study of scale; Lettering; Execution of plan, elevation and section; Execution of oblique, isometric and diametric drawings; Introduction to mechanical perspective.

References:

Ching, Francis.D.K Architectural Graphics
Gill,Robart.W Rendering With Pen & Ink

ARC 119 AESTHETICS AND DESIGN
2 Hours/Week, 2 Credits.

Part-A: 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; Methods of aesthetics; Aesthetic activity, Essence and principal forms of aesthetics, Theoretical models of Aesthetics; Aesthetics as meta category - the Mood, Rasa and the Style; Psychology of perception and creation; Developments of ideas and their trends in the field of aesthetic activity, the concept and the architectural concept, theory of criticism.

Part-B: Introduction; Definition of design; Basic theories of design related to use of point, line, plane, form, volume and space. Overview of theories and application of design proportion, scale and composition.Principles of spatial and formal organization.The source, generation and transformation of design elements, forms and spaces. Architectural design; Design methods; Design in nature; Man and design; Principles of Design; Elements of design, Architectural form, space, scale and proportioning system in relation to human perception and experiences.

References:

EuriBorev	Aesthetics
Colin Lyas	Aesthetics
Scranton Roger	The Aesthetics of Architecture
Anne Shultz	Aesthetics, An Introduction to the Philosophy of Art
Ranjon K Ghosh	Aesthetic theory and Art
J Palmer and M Dodson (ed)	Design and Aesthetics.

ARC 108E COMPUTER AIDED ENGINEERING DRAWING
3 hours/Week, 1.5 Credits

The aim of this course is to introduce students the basic concepts and the use of engineering drawing in the design and manufacturing field. The students acquaint with the basic knowledge and skills in engineering drawings and the capability to read and interpret blue prints for manufacturing. The students can also develop an understanding of 2D and 3D computer aided drafting with the requirements of good engineering drawings and be able to apply them to their work.
It is essential to know the technical drawing rules before starting CAD-CAM programs. Using computers at the beginning of the engineering education will help the students visualize engineering components. Appropriate sketching exercises will be done during practice hours by using a package program namely AutoCAD. The CAD software should be perceived by the student as a tool for producing engineering drawings. However, it should be strongly felt that students should design shapes that suited the purpose and manufacturing methods rather than being driven by the software capabilities.

Reference:

Thomas P. Zurflieh	AutoCAD 2004 3D Drawing and Solid Modeling

ARC 121 ART AND ARCITECTURE – II (Medieval Civilization)
2 Hours/Week, 2 credits

Part-A: A critical evaluation of the architecture of Western civilization. Its roots in Etruscan and Roman architecture which developed through the ages of Early Christian, Byzantine and Romanesque periods resulting in the Gothic style.Revival of classical thoughts in the Renaissance period.

Part-B: Climatic, geographical, religious and social influences on the architecture of the various regions of Europe in these periods. Structural innovations and construction systems adopted in different periods. Comparative study of the development of architectural styles in different periods to understand their development and changes.

References:

Fletcher.B	A History of Architecture, Architectural Press; 20 edition (21 Sep 1996)
Fazio.M	A World History of Architecture, Publisher**:** McGraw-Hill Professional; 2nd Rev ed.
Cole.E	The Grammar of Architecture, Bulfinch
HARVEY. J. H.	The Gothic World 1100-1600, London, 1950.
MURRAY, PETER	Architecture of the Renaissance, New York, 1971.
MILLON, HENRY, A. (ed)	The Triumph of the Baroque Architecture in Europe 1600-1750, London, 1999.
MINOR, VERNON, HYDE	Baroque and Rococo Art and Culture, London, 1999.

ARC 122 DESIGN STUDIO II

9 Hours/Week, 4.5 Credits.

Relationship of Form and Space in three dimensions.Basic composition with colour schemes; Lines, planes, primary forms and other geometric forms.Introduction to the process of form making.Interaction of Form and Space.Exposure to the domain of architecture with simple functions.Study of a simple Architectural space.

ARC 123 ED-I, CLIMATE AND DESIGN
2 Hours/Week, 2 credits

Part-A: Solar Geometry; Introduction to Design with Climate; Man and his response to climate; Elements of climate and their influence on the built form; Built-environment design in various climatic zones; Tropical climate; Site climate.
Part-B: Principles of thermal design and means of thermal control; Relationships between built form and sun, wind, precipitation etc.; Design methods and procedures of passive climatic control.

References:
Koenigsberger, Ingersoll, mayhew, szokolay Climate Design Manual of tropical climate

ARC 124 ARCITECTURE GRAPHICS II
6 Hours/Week, 3 Credits.

Execution of mechanical perspective; Introduction to shades, shadows and reflections; Presentation & rendering.
Execution of single view drawings such as Axonometric drawings, mechanical perspectives; Introduction to shades, shadows and reflections; Presentation & rendering. Presentation techniques in various media.

References:
Ching, Francis.D.K Architectural Graphics
Gill,Robart.W Rendering With Pen & Ink

ARC 125 ART APPRECIATION
2 Hours/Week, 2 credits

Part-A: Criticism and Appreciation. Definition of art; Relationship between art & science; Art as social phenomenon; Function of art; The method of art; Branches of art; Evolution of different art forms; Introduction to concept, perception and development of art in different context.

Part-B: Understanding of all media of art like music, poetry, theatre, film etc. Characteristics of various forms of art, meaning of art, art as experience and expression, the language of visual art, typology of visual art, analysis of the work of art; theory of criticism (this is a complementary course to ARCH 119 AESTHETICS AND DESIGN).

References:
Faulkner, R., Ziegfeld, E., and Smagula, H. Art Today (sixth edition); Holt, Rinehart and Winston, Inc. 1987
Lyas, C. Aesthetics; Routledge; London.2003
Nelson, R.S. and Shiff, R. Critical Terms for Art History (second edition) 2003
Read, H. The Meaning of Art; Penguin Books Ltd., in association with Faber and Faber; London. 2003
Bore, Yuri Aesthetics (Sociological Aspect)
Lies ,Colin Aesthetics (Philosophical Aspect)
Herbert Read The Art of Sculpture (Sculpture)
Planet Drum MickyHert(Origin of Music)
Ashok Mitra PoschimEuroperChitrakala, Chobika k bola, Europe arvashkarjo. (Art n Sculpture)
MoinChoudhury Shristirsiri (Literature n' Contemporary Philosophy)
Dheman Das Gupta Composition, Cinemar image (Form Appreciation)
Shattajit Roy BishoyChalochitra (Film Appreciation)
ShunilGangopaddhai Chobirdeshkobitardesh, Onnodesharkobita (Art-literature movement)

ARC 126 COMPUTER APPLICATION-I
3 Hours/Week, 1.5 Credits

Basic computer application; Architectural design graphics, Photo-shop, CorelDraw etc. Using suitable Computer Aided Design through Design project.

ARC 127 ECOLOGY & ENVIRONMENT
2 Hours/Week, 2 credits

Definition; Habitat, Bio-geographical distribution and abundance; Evolution and adaptation; relationship of eco-systems with built-environment; Inter specific interactions; Trophic levels and energy flow. Bio-diversity, Law of interdependence, Community; Man and his environment; Biological conservation; Environmental pollution, Crisis in the built-environment. Concepts in Eco-design.

ARC 202C AUTO CAD FOR CIVIL & ENVIRONMENTAL ENGINEERS
3 Hours/Week, 1.50 Credits

Basic notion about AutoCAD for civil & environmental engineering profession. Two dimensional (2D) design by using AutoCAD tools. Relationship between 2D & 3D design.Methods for a presentable drawing.

ARC 211 ART AND ARCITECTURE III (South Asian Civilizations)
2 Hours/Week, 2 Credits

Part-A: The course will include the basic essence of south Asian Architecture associating chronological development in the early age. Study of art and Architecture in the South Asia with special emphasis on the styles of the Vedic, Buddhist and Hindu periods up to the 17th century.

Part-B: The emphasis will be laid on the medieval developments in continuation to its earlier roots. Critical evaluation of the art and architecture under the Muslim rule in South Asia. The course will conclude with Sources of Muslim Architecture in South Asia Region; Imperial style; Sur or Pathan period; Mughal period.

REFERENCES:

GROVER, S.	Buddhist and Hindu Architecture in India.
BROWN, P.	Indian Architecture (Buddhist and Hindu Period), Taraporevara& Sons, Bombay, 1965.
ASHCROFT	Indian Art and Architecture.
THAPAR, RAMILLA	A History of India
EDWARDES, M.	Indian Temples and Palace, Paul Hamlyn, London, 1959.
NEHRU, J.	The Discovery of India, Meridian Books, London, 1946.
PIGGOT, S.	Pre-historic India, Penguin Books, Harmondsworth, 1966.
RAWLINSON, H. G.	India: A Short Cultural History, The Cresset Press, London, 1937

ARC 212 DESIGN STUDIO III
12 Hours/Week 6 Credits.

Consideration of human being as the basis of architectural design; Study of anthropometry and ergonomics; Study of relationship between man – space – form – function. Introduction to scale and proportion in architecture; Understanding of environmental features interacting in shaping the architecture.

ARC 213 BASIC PHYSICAL PLANNING
2 Hours/Week, 2.00 Credits

Part A: 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.

Part B: The 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.

References::

DOXIADIS, C.A.	Ekistics: An Introduction to the Science of Human Settlements, Hutchinson and Co.Ltd.,London. 1968
ALL, P.	Urban and Regional Planning (third edition), Routledge, London. 1992
GALLION, A.B. AND EISNER, S.	The Urban Pattern: City Planning and Design, CBS Publishers and Distributors, New Delhi. 2000
STRAYER, J.R. AND GATZKE, H.W.	The Mainstream of Civilization (third edition), Harcourt Brace Jovanovich, Inc., New York. 1979
BOURNE, L.S. (ed.),	Internal Structure of the City: Readings on Space and Environment, Oxford University Press, Inc., NY. 1971

ARC 214 COMPUTER APPLICATION II
6 Hours /week, 3 Credits

Computer graphics and its basics. 2-D and 3-D graphics with the help of computer software (like Auto-Cad, 3D studio Max, Sketch-up). To understand and to use graphic software in Architectural presentation and design.

ARC 215 BUILDING & FINISH MATERIALS
2 Hours/Week, 2 Credits.

Part A: Classification of different types to building materials. Preparation, manufacturing, use and application of brick, cement, sand, concrete, steel, timber, etc.

Part B: Classification of different types to finish materials. Preparation, use and application of glass, plastic, tiles, paint, roofing insulation, etc. Detail sketches.

Reference:

Aziz, M. A.	Engineering Materials
Smith, R. C.	Materials of Construction
Anders, C. K.	Manufactures Manuals and Brochures

ARC 217 ED-II, VISUAL & SONIC ENVIRONMENT
2 Hours/Week, 2 Credits.

Part A: Visual: The environment, physical nature of the lighting environment, human responses to environmental vision factors. Daylight in Architecture, prediction tools and techniques of supplementary and artificial lighting, designing for daylight in the tropics.Lighting and indoor space quality.

Part B: Sonic: The concepts and problems related to Architectural acoustics; properties of sound; the fundamental s of sound perception, generation and propagation; Behaviour of sound in enclosed spaces. Principles of acoustic design of rooms for speech.music and multi-purpose use. The concept of noise and noise and control; criteria for noise control design and acoustical measurements.

Reference:

Egan, M.D	Concept in Lighting for Architecture
Egan, M.D	Architectural Acoustics.
Koenigsberger, O.H	Manual of Tropical Housing & Building
Muktadir, M.A	Designing Buildings in the Tropic
Robbesis, Claude L	Day Lighting; Design and analysis

ARC 219 DISASTER MANAGEMENT
2 Hours/Week, 2 Credits.

Types of environmental risks and hazards in Bangladesh. Risk assessment and management. Cyclone risk, Flood risk, Earthquake risk etc and their management. Risk assessment for the future development of an area. Pre disaster preparedness policy and roadmap, post disaster action plan and rehabilitation strategy. Urban Hazards and Risk Management. Urban hazard mapping techniques and responsive planning and design. Structural response and warning systems. Demographic and socio-economic features. Technical and Institutional aspects of Pre and post hazard management. Capacity building for disaster risk reduction.

Site design, building codes, configuration and building systems. Architectural issues of seismic retrofitting of buildings.

ARC 221 ART AND ARCITECTURE IV (Modern)
2 Hours/Week, 2 Credits.

Part-A: Overview of the formative strands of Modern Architecture: Neoclassical architecture, The Bauhaus. Cubism and the new conception of space.Critical appreciation of different forms of Art and Architecture in the 19th and 20th centuries. 19th Century Realism. Impressionism, Post Impressionism, Fauvism, Expressionism, Cubism, Purism, Orphism, Futurism and Vorticism. The New Collectivity: Art and architecture in the Soviet Union.

Part-B: The Ideal Community, Alternatives to the Industrial City. The International Style.monumentality. Modern Architecture in the USA, Europe, Latin America, Australia and Japan.Modernity, Tradition and Identity in the developing World.Pluralism in the 1970's. Modern Architecture and Memory: New perception of the post. The Vicissitude of ideology:

CIAM and Team X. International theory and practice since 1962. (Reference be made on the Art & Architecture of SAARC countries)

References:

Grover, Satish Islamic Architecture in India
Brown, Percy Indian Architecture (Islamic Period)
Alfieri, HYPERLINK "http://www.amazon.com/Bianca-Maria-Alfieri/e/B0034OE7K8/ref=ntt_athr_dp_pel_1"Bianca MariaIslamic Architecture of the Indian Subcontinent
Koch, Ebba Mughal Architecture
Shahnawaz A.K.M: History of Indian Sub continent – Sultan Period
Shahnawaz A.K.M: History of Indian Sub continent – Mughal Period

ARC 222 DESIGN STUDIO IV
12 Hours/Week, 6 Credits.

Case studies to comprehend the underlying relationship among function, form, space and technology in architecture. Analysis of function in order to formulate architectural program to generate site specific architectural form in three dimensions.Understanding of basic concepts of architectural forms and identification of spaces in term of exterior-interior; served-service; activity-circulation etc.Report writing based on literature survey and field studies.Design of buildings with simple functions.

ARC 223 CONSTRUCTION METHODS & DETAILS
2 Hours/Week, 2 Credits.

Part A: Types of foundations, their methods and techniques of construction. Masonry works, different types of brick bond and their procedure, partition walls and cavity walls. Construction technique of lintels and arches.Method of damp proofing and its treatment.Types of floor and their construction system.

Part B: Stairs of different materials and construction technique. Carpentry joints, door-window and their classification. Classification and construction technique of roof.Plastering system. Application of paint, varnishes and other finishes.

Reference:

Kumar, Susil Building Construction
Singh, Gurucharan Building Construction
Punmia, B. C. Building Construction
Francis D. K. Ching Building Construction Illustrated

ARC 224 PHOTOGRAPHY AND GRAPHIC REPRODUCTION
3 Hours/Week, 1.50 Credits.

Introduction to photography- photography as a representation art and as an independent art media, basic conception of image, Importance of photography in Architectural study and documentation.Operations of camera, types of camera, lenses, films, pixel.Understanding exposure, depth of field. Photography projects: typical exercises starting with under-over-optimum exposure, depth of field, etc and continuing with landscape- panorama, micro, night-time, profile-portrayal, modelling, theme photography; photography of architecture (interior-exterior) and its mock-up models. Dark room techniques in black and white, basic instructions about computer manipulated photo prints.

ARC 225 ED-III, CLIMATE AND DESIGN-II
2 Hours/Week, 2 Credits.

Part-A: Relationship to the environment and response to climate. Geo-physical forces and built form; Passive means of controlled environment; Solar land planning and development; Use of building materials, utilization of natural and other resources and local construction skills. Communication and transmission of knowledge of indigenous building systems and techniques.

Part-B: Innovative use of indigenous technologies in the built environment design. Passive means of climatic control in the built-environment. Design response in specific climatic regions (this is an advanced course of ARCH 123: Climate and Design-I).

References:

Koenigsberger Climate Design

Ingersoll, mayhew, szokolay Manual of tropical climate,

ARC 226 GRAPHIC ART & SCULPTURE
3 Hours/Week, 1.50 Credits.

Basic techniques used in graphic art. Selection of drawing instruments, surfaces, typography. Graphic reproduction techniques and the pros and cons of the different systems to achieve the most effective presentation.
Sketching as an essential technique to record design ideas during conceptualization.Graphic design of posters, products, display, portfolio.Study and analysis of Sculpture. Exercises based on the use of different types of materials.

ARC 227 PHYLOSOPHY
2 Hours/Week, 2Credits

Part A: Introduction to philosophy, definition of philosophy, purpose of philosophy. Fundamental of philosophy; Nature of philosophical enquiry; Relationship of philosophy to science, history, politics, religion and specially to architecture.

Part B: Cognitive psychology, learning, thinking and creativity, Environmental psychology and phenomenology of space, social psychology and architecture; Social logic of space.

References:
Colquhoun.A Modern Architecture,
HYPERLINK "http://www.amazon.co.uk/Kenneth-Frampton/e/B000APL18K/ref=ntt_athr_dp_pel_1" Frampton.KModern Architecture: A Critical History.
Curtis .W.J.R Modern Architecture since 1900, Phaidon Press Limited
Lang.J A concise history of Modern architecture in India. Permanent Black

ARC 228 FIELD WORK (Contemporary)
7 days, 1 Credits.

Students will visit contemporary buildings in Bangladesh to acquire practical knowledge.

ARC 311 ART AND ARCITECTURE V (Contemporary)
2 Hours/Week, 2 Credits.

Part-A: Crisis of Modernism in the society and in the field of literature, art and architecture; High modernism; Postmodernism as a reaction to HYPERLINK "http://en.wikipedia.org/wiki/Modernism" \o "Modernism" Modernism. Theories and Manifestos of architecture, Deconstruction; Architecture and Disjunction, Ecotech and hi-tech.

Part-B: Recent developments in the fields of architecture around the world, with special reference to South Asian region, by the influence of new technology including seismic issues and changes in contemporary social vocabulary. Impact of globalization and open market system in architecture; Study of Architectural identity and regionalism in architecture; Contemporary Architecture of Bangladesh.

ARC 312 DESIGN STUDIO V
12 Hours/Week, 9 Credits.

The principles and process behind generating architectural forms.Understanding the relationship of form and space to accentuate experiential qualities in architecture.Introduction of the basic relationship between structural logic and formal expression. Influence of technology in function, form and space.

ARC 313 VERNACULAR ARCHITECTURE & SETTLEMENTS
2 Hours/Week, 2 Credits.

Part-A: Defining vernacularism; Vernacular architecture and settlement and its evolution; Concepts and approaches to the study and analysis of vernacular architecture. Types and forms of vernacular architecture – vernacular know how and design. Symbolism and cultural expression generating vernacular building form and texture.
Part-B: Change facing vernacular architecture in the contemporary context. Organizational community development, housing and institutional building programs in vernacular settings. Learning from vernacular architecture: Site & Context; Self-help and community-based approaches. Future directions and prospects.

ARC 314 WORKING DRAWING I (Construction)
6 Hours/Week, 3 Credits.

Design and drawings specifying materials and instructions for construction, Understanding construction process and techniques. The construction drawing will include preparation of working and detail drawings of all building components. Details of drainage, damp-proofing and insulation.Bathroom and kitchen layouts.Application of building codes and by-laws.

ARC 321 ART AND ARCHITECTURE VI (Bengal)
2 Hours/ week, 2 Credits

Part-A: Study of society, culture and Architecture of Bengal through the ages: Mauryan, Pala, Sena, Sultanate and Mughal periods. Language, custom, art and literature, and their relevance to Architecture and planning.Indigenous architecture of Bengal as a response to soci-cultural and geo-climatic forces.

Part-B: Study of society, culture and Architecture of Bengal through the ages: Colonial and post colonial Bengal. Language, custom, art and literature, and their relevance to Architecture and planning.Contemporary architecture of Bangladesh – analyzing the roots and global forces.

REFERENCES:

Nazimuddin Ahmed	Monuments of Bangladesh
A. H Dani	Muslim Architecture of Bengal, Cultural Survey of Bangladesh by Asiatic Society
A B M Hossain	Architecture (Asiatic Society)

ARC 322 DESIGN STUDIO VI
12 Hours/Week, 9 Credits

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 in relation to their creative formal expression. Creative / innovative response to site and surrounding landscape and built-forms.

Architectural design of multistoried buildings for gravity and lateral loads on earthquake resilient design.

ARC 323 URBAN DESIGN
2 Hours/Week, 2 Credits

Part-A: 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.
Part-B: Urban renewal, redevelopment, conservation etc. and development control. 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.

REFERENCES:

SPREIREGEN, P. D.,	Urban Design: The Architecture of Towns and Cities, Mcgraw-hill Book Company.
GEDDES, SIR PATRICK	Cities in evolution, Earnest Benn, Ltd., Benn Bros., Ltd., London 1946.
HOWARD, SIR EBENEZER	Garden Cities of Tomorrow, Faber &Feber, Ltd., London, 1946.
RODWIN, LLOYED	The British New Town Policy, Harvard University Press, Cambridge, Mass., 1956.
SITTE, CAMILLO	The Art of Building Cities, Reinhold Publishing Corporation, New York, 1945.
BOWRA, SIR, MOURICE	Golden Ages of the Great Cities, Introduction by Sir Earnest Barker, Thames Hadson, London, 1952.

ARC 324 FIELD WORK (Bengal)
7 days, 1 Credits.

Students will visit historical buildings and structures in Bangladesh.

ARC 325 WORKING DRAWING II (Production)
6 Hours/Week, 3 Credits.

Design and drawings specifying materials and instructions to manufacturers of building elements, components, fittings and fixtures which are industrially produced understanding manufacturing process to generate creative design. The production drawing will include designing with variety of materials and manufacturing process of a range of building components like

door, window, fitting and fixture of functional and decorative nature.

ARC 412 DESIGN STUDIO VII
15 Hours/Week, 12 Credits

Perception of urban context and the emergent forces that shape a city; Understanding urban activities, movement and environmental aspects to attain liveability in cities and quality of life; Understanding urban design process – from program formulation to urban design interventions. Designing spaces between the buildings vis-à-vis urban masses I response to human needs and scale. Articulation of architecture into the public realm through design of building complexes at urban scale.

ARC 413 INTERIOR DESIGN
2 Hours/Week, 2 Credits.

Part-A: Definition of Interior Space and Interior Design, relation between interior & exterior of a built form, Principles of interior design, interior design vocabulary, interior building elements – wall, ceiling, floor, door, window and their construction, articulation, operation.

Part-B: Design of various interior spaces in relation to occupancy and environmental factors. Artificial lighting and acoustics of interior, Functional separation of spaces and interior furniture, mechanized ventilation. Finish materials and furniture details.

ARC 414 INTERIOR DESIGN STUDIO
3 Hours/Week, 1.50 Credits.

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.

ARC 415 HOUSING
2 Hours/Week, 2 Credits

Part-a: Housing policy and Planning; Housing and Community; Their influence on individuals, societies and their environment, Physical, social, economic and technical aspects of housing problems in Bangladesh. Legislations and regulations;
Part-B: Low-cost and low income group housing; Role of private and public sectors in housing; PPP; housing finance, space standards, housing infrastructure and other design requirements. Current housing technologies and market scenario.

References:

ADAMS, T.	The Design of Residential Area, Harvard University Press, 1934.
ALDERSONS, S.	Housing, Penguin, 1962,
AMEEN, SHAHIDUL & RAHAMAN, M.	Transformation Properties in Shelter Generation: Study of a Government Built Low Cost Housing Development Scheme, (Housing Development and Management, Canter for Built Environment, 1996, ISBN-86699.00-7)
TURNER, C., JOHN	Housing Priorities, Settlement Pattern and Urban Development in Modernizing Countries, 1968.
WITTKAUER, R.	Architectural Principles and the Age of Humanism, Tiranti, 1952.

ARC 417 SUSTAINABLE ARCHITECTURE
2 Hours/Week 2 Credits

Basic concepts of sustainable built environment design. Ecosystems and built-environment design. Environmental forces and built form interaction. Passive means of built environment control. Concepts in bioclimatic design. Appropriate technology for built environment design. Built environment design in the local context. Water and wetland architecture and settlements. Architecture and settlements in the hilly terrain urbanism. Basic concepts of recycling, renewability and conservation. Urban ecology and responsive environment. Environmental analysis, accounting and monitoring of buildings. Computer based simulation techniques.

ARC 419 ARCITECTURAL CONSERVATION

2 Hours/Week 2 Credits

Part-A: Architectural & Urban Conservation; Its meaning, principles and scope; History and issues of conservation; Preservation, restoration, renovation, reconstruction, adaptation, reuse, redevelopment, renewal etc at building and urban scale. Valuation and diagnosis.
Part-B: Conservation laws and practices, issues and context. Conservation policy, ethics, regulations, technology and finance. Local and International case study and good practices.

ARC 422 DESIGN STUDIO VIII
15 Hours/Week, 12 Credits

Projects focusing on urban renewal -regeneration, conservation, redevelopment and rehabilitation of city blocks.Investigation, analysis and design of housing/ communities with specific themes and their impact on the immediate environment.Architecture of spiritual and emotional content.

ARC 423 LANDSCAPE DESIGN
2 Hours/Week, 2 Credits

Part-A: 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.

Part-B: 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 will be used towards the assessment of buildings and site design.

References:
Simonds, John Ormsbee- Landscape Architecture. Ctherine Dee- Form & Fabric in Landscape Architecture.

ARC 424 LANDSCAPE DESIGN STUDIO
3 Hours/Week, 1.50 Credits

Study of landscape natural and man-made elements, drawings and reports on outdoor elements and environment, Site analysis.Landscape graphics; Application of the principles and techniques of landscape design through design exercises of site planning and area development.Design of utility, maintenance and services.

REFERENCES:
DEE, C. Form and Fabric in Landscape Architecture, Mcgraw-Holl Book Company, Spon Press, 2001.
APPLETON, J. The Experience of Landscape, 2nd Edition, Chichester, JhonWaley, 1996.
GREENBIE, B. Dimensions of the Human Landscape, New Heaven, Yale University Press, 1981.
ALEXANDER, C. ISHIKAWA, S. and SILDERSTEIN, M. A., Pattern Language, New York, Oxford University Press, 1981.
KAPLAN, R. and KAPLAN, S.The Experience of Nature: A Psychological Perspective, Cambridge University Press, 1989.
WHISTON SPIM, A., The Language of Landscape, New Heaven, Yale University Press, 1998.

ARC 426 PROFESSIONAL TRAINING
4Weeks, 2 credits

The student is required to work in an Architectural firm under an authorized Architect/s for a minimum of 4 weeks to gain practical experience. After completing 90 credits, a student may opt to acquire professional experience on part time basis under a member of Institute of Architects. The student shall submit a portfolio of his professional works at his convenience before final term to be evaluated by a board of examiners for a satisfactory certificate.

ARC 511 SURVEY TECHNIQUE AND ANALYTIC METHODS
2 Hours/Week, 2 Credits

Part-A: Engineering Survey and or Physical Survey; Introduction to surveying- principles and techniques of physical surveys. Chain survey, traverse survey, plane table survey, levels and levelling, contours and layout surveys.Plan and Interpretations.

Part-B: Analytic Methods and Social survey; Designing the research- purpose and goal, variables and universal, selection of

methods. Planning of social survey.Pre-test, pilot / reconnaissance survey, population, universe etc.Methods of collecting information.Sampling; Questionnaire and interviews; Data processing.Documentation.

ARC 512 DESIGN STUDIO IX
18 Hours/Week, 15 Credits

Exercise on professionally comprehensive work including all design phases from formulation of architectural program to preparation of working drawings; Identifying design task to specific realistic problems; applying the existing codes and bylaws, and concentrating on the most significant contemporary environmental and professional challenges.

ARC 513 ARCHITECTURAL PROGRAMME FORMULATION.
2Hours/Week, 2 Credits.

Writing skills and Referencing, as well as Verbal and Written presentation skills and techniques would be assessed throughout the semester. The course would begin with Architectural project selection. Research design, Data collection, analysis and decision-making process. Research methods in architecture. Literature review, case studies and surveys. Lessons learned from past failures and success stories. Analogy and concept selection and development of an architectural programme. Development of design guidelines and checklists. Design development strategy in a specific context / site.

ARC 514 SEMINAR
3 Hours/Week, 1.5 Credits

Overview of current development in research related to art and Architecture. Research and design process; Research design; Preparation of research papers including literature search, writing skills and referencing.Verbal and written presentation skills and techniques.

ARC 521 PROFESSIONAL PRACTICE
2 Hours/Week, 2 Credits

Part-A: The role of the Architect in the building industry and process; duties, responsibilities and obligations of the Architect; general conditions of contract; owner-Architect relationship; Architectural services; the Architect and the public; legal responsibilities of the Architect; Architects code of Conduct. Ethics.

Part-B: The Architect's office; administration of construction; Competitions; 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.

Reference:
Namavati, Roushan Principles of Professional Practice
IAB Code of Ethics and Professional Conduct

ARC 522 DESIGN STUDIO X-THESIS
18 Hours/Week, 15 Credits

Identification of viable 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. Stress is given on the objective analysis of the related factors and in transforming them into a tangible Architectural solution of professionally acceptable quality.

Design exercises of realistic complexities emphasizing professional level of competence. Formulation of Architectural programs for given projects. Preparation of design solution and development through the various phases.

ARC 524 DISSERTATION-THESIS
6 Hours/Week, 3.0 Credits

Approach to report writing. Preparation of report to supplement the various aspects of the thesis project of Arc 522. Design Studio X. The report should reflect the student’s research in areas related of the thesis, comparative analysis and case studies. This should lead to the formation of criteria and conceptual approaches, design program and guidelines for design of the thesis in Arc 522: Design Studio X (Thesis)