

YEAR 2 BACHELOR OF ARCHITECTURAL STUDIES COURSE OUTLINE

SEMESTER 1

Course Code	Course	Hours	Examination
BAR 201	Building Technology and Services 3	45	1 x 2hr Paper
BAR 203	History And Theory of Architecture 3	45	1 x 2hr Paper
BAR 205	Building Science 1 (Thermal Design)	45	1 x 2hr Paper
BAR 207	Theory & Design of Structures 1	45	1x 2hr Paper
BAR 209	Urban and Regional Planning	45	1 x 2hr Paper
BAR 213	Architectural Design 3	240	By Coursework

SEMESTER 1

Course Code	Course	Hours	Examination
BAR 202	Building Technology and Services 4	45	1x 2hr Paper
BAR 204	History And Theory of Architecture 4	45	1 x 2hr Paper
BAR 206	Building Science 2 (Lighting Design)	45	1 x 2hr Paper
BAR 208	Theory and Design of Structures 2	45	1 x 2hr Paper
BAR 210	Interior Architecture 1	45	1x 2hr Paper
BAR 214	Architectural Design 4	240	By Coursework

COURSE DESCRIPTION

BAR 201 BUILDING TECHNOLOGY & SERVICES 3 45 Hrs

The construction process, Earthworks, foundations, exterior wall construction. Stone, brick, block composite walls, cavity walls, concrete framing. Columns, beams, slabs. Introduction for one family house.

BAR 203 HISTORY AND THEORY OF ARCHITECTURE 3 45 Hrs

Western architecture and urbanism from the earliest times until the end of the Middle Ages. The theories behind the origin of the modern movement emphasising the various interpretations of functionalism and its opposition, e.g. art deco, classicism.

BAR 205 BUILDING SCIENCE 1 (Thermal Design) 45 Hrs

Concept of comfort and stress and the need for environmental control in architecture. Human thermal balance and the physiological control. Thermal indices and criteria for thermal comfort. Thermal design, thermal units, theory of heat flow, thermal properties of materials, heat flow in buildings, steady state and periodic flow. Climatological site analysis and application of thermal comfort indices at planning and sketch design stage. Heat control, solar radiation and shading devices. Solar energy and its application in Architecture. Ventilation in buildings. Natural and artificial ventilation. Air conditioning in buildings.

BAR 207 THEORY AND DESIGN OF STRUCTURES 1 45 Hrs

The need for theory of structures in Architecture. Designing of building structure - structural morphology. The effects of structural decisions on architectural design. Function, economy and aesthetics. Classification of structures based on basic analysis - rigid and deformable. Building structural systems and special structures. Design loading for buildings to relevant specifications. Concepts of wind and earthquake loading. Loads as applied to engineering members - point and distributed loads. Forces of deformation - Nature and effects. Force transfer in components. Lateral stability. Introduction to statics; principles of equilibrium, types of supports reactions, free-body diagrams. Resultant analysis by method of joints and graphical.

BAR 209 URBAN & REGIONAL PLANNING 45 Hrs

Land as man's resource, land-use allocation and how it is determined, evolution of human settlements and the need for planning. Regional Planning and Regional Surveys (objectives, principles and processes). Urbanisation and growth of Urban settlements. Urban planning and Development control (objectives, principles, processes). Introduction to Legislation on Land, Planning and Development control.

BAR 213 ARCHITECTURAL DESIGN 3

240 Hrs

Basic understanding of design process and design vocabulary through a set of graded design exercises. Introduction to space structure and form in architecture. Principles of geometric, structural and spatial organization, routes of movements, image, structure and identity. Characteristics and synthesis of space and form, behavior and strength of materials, spanning systems and techniques of construction. Use of a varied kit of tools in architectural design and presentation e.g. Photography, freehand, technical drawing, CAD etc. Computer graphics, basic modelling technics, Space and form appreciation, Rendering technics and presentation technics. Basic principles of photography as medium for recording observation, presentation and communication in Architecture. Digital manipulation and editing of still and motion pictures.

BAR 202 BUILDING TECHNOLOGY & SERVICES 4

45 Hrs

Doors in timber and steel. Windows in timber and steel. Aluminum works. Wall finishes and cladding, fairfaced concrete works. Interior carpentry, iron walls, paving, street furniture, fountains, plasters. Electrical services installation: Power, lighting, communication. Fire protection, installation and regulations.

BAR 204 HISTORY AND THEORY OF ARCHITECTURE 4

45 Hrs

Architectural history from seventeenth century to the beginning of the modern movement. The industrial revolution and its effects on the planning and architecture of cities. Rebirth of city planning, New materials and processes. Revivals in Arts and Crafts Movement, Art Nouveau, Werkbund, The Chicago School etc. The Bauhaus, De Still, Futurism, C.I.A.M., Team X and the International style, Works of Modern masters; Frank .L.Wright., Le Corbusier, Louis Kahn Alva Aalto etc. 20th century architecture and western urbanism from neo-classicism to the present.

BAR 206 BUILDING SCIENCE 2 (Lighting Design)

45 Hrs

Introduction to lighting and its properties. The visual mechanism, scotopic and photopic vision, glare and its control, lighting units. Natural and artificial lighting analysis and design. Lighting design for specialized functions – e.g. auditoria, theaters, studios, exhibitions etc. Selection, specification and installation of light fittings.

BAR 208 THEORY AND DESIGN OF STRUCTURES 2

45 Hrs

Mechanical properties of structural materials, relationship between stress and strain, elastic constants, and concept of permissible stresses. Approximate values. Beams-classification, SF and BM calculations for cantilever, simply-supported and over-hang beams. Deformations of beams in pure bending - Navier's theorem. Shear stresses in bending - general expression. Section properties - centroid, first and second moment of areas and radius of gyration. Section modulus. Deflection of beams. Application in rectangular, circular and I-sections. Structures steel - properties, available structural steel sections, designation and grades. Hot rolled and cold-formed members. Design of structural steelwork; principles of design by BS 449 and BS 5950. Elastic design of structural steel components: simply supported beams, columns, and angle members (purlings, cladding, sheeting, truss components).

BAR 210 INTERIOR ARCHITECTURE 1

45 Hrs

Appropriate sensory mechanism of the human body Tactile, visual, audio sensory mechanisms. Determining the amount of internal space required. Area and volume of space Vis a Vis the function characteristics of internal surface finish materials. Texture, colour, reflectance/absorbency of light

and sound, durability and maintenance. Lighting application in interior design - Natural and artificial. Furniture and fittings - materials design, colour, layout. Internal circulation and space use. Presentation of interior design information.

BAR 214 ARCHITECTURAL DESIGN 4

240 Hrs

Basic understanding of design issues and design language through a set of graded design exercises. Basic skills in the use of various materials and media for design expression. Basic understanding of design morphology, Space and form making elements, spatial and structural order, routes of movement and principles of organization. Correlation of anthropometrics and functions. Advance skills for architectural presentation and rendering techniques. Use of thumb sketches, thematic sketches, axonometric and perspectives models etc. In design formulation and presentation. Advanced skills in Computer Aided Architectural Design, drafting, rendering and presentation techniques.