

GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for B.Arch

Fourth Semester

TEACHING SCHEME

Sub code.	Subject Name	Credit	Teaching Scheme (Hours)			University		Internal Marks (Term work)	Total Marks	Uni. Exam. Type & Duration
			Lecture	Field work	Studio	Theory/ Drawing	Jury / Viva			
1045001	Architecture Design-IV	14	2	4	8	NA	40	60	100	Jury
1045002	Building Construction -IV	08	2	2	4	40	NA	60	100	Drawing Exam (3 Hours)
1045003	Structure-IV	02	2	0	0	50	NA	50	100	Theory Exam
1045004	History Of Architecture-II	02	2	0	0	50	NA	50	100	Theory Exam
1045005	Computer Applications-I	02	1	0	1	NA	40	60	100	Practical Exam
1045006	Landscape Architecture	02	1	0	1	50	NA	50	100	Theory Exam
	Total	30							600	

SYLLABUS

Subject Code & Subject Name	Description
1045001 Architecture Design-IV	<p>Focus: To understand the approach to the design process in terms of:</p> <ul style="list-style-type: none"> • Abstract concepts and ideas in a design • Appropriate forms for different functions, • Built form with special reference to climate, material , social & cultural context, physical environment • Context as a determinant of Architectural character <p>Content:</p> <ul style="list-style-type: none"> • The design process and role of abstract concepts and ideas as an ordering mechanism to express ideas - like Symbolism and communication, identity, character, etc. • Exploring environmental qualities like light and colour, texture & scale and its usages in expressing design concepts • Analytical studies of indigenous settlements to understand the socio-cultural elements, environmental impact and their impact on the built form (Cluster & community - street pattern, Traditional design and construction principles, Issues of modernity and tradition) • Understanding appropriateness of building and construction system based on the criteria of workmanship/materials available, climate, adoption of alternative material or technology, maintenance issues, etc. • Understanding architecture's role in mediating socio-cultural environment through the documentation & analysis of an existing / traditional settlement

	<ul style="list-style-type: none"> (Work done in the RSP might be used as a context and the studio program could be proposed within the vicinity of the settlement studied.) <p>Reference Books:</p> <ol style="list-style-type: none"> Form Space & Order, Francis D.K.Ching, John Wiley & Sons Towards New Architecture, Corbusier, Le Dover Publications Inc , New York Lateral thinking, De Bono, Edward, Harper Collins Publishers
1045002 Building Construction-IV	<p>Focus:</p> <ul style="list-style-type: none"> Study of Interior elements like false ceiling & Light partitions. Study of Hollow walls used in construction. Advanced Services in Buildings (Air conditioning, Electrification, Lifts & Escalators). Toilet & Kitchen Design. <p>Content:</p> <p>Construction</p> <ul style="list-style-type: none"> False Ceiling: Asbestos sheets, soft boards, Plaster of Paris, Gypsum boards, etc. in framework of timber, steel, or Aluminium, alongwith details of lighting and AC grid panels and concealed lighting. Light Partitions: Timber, Asbestos sheet, soft board & glazed partitions, etc. Hollow walls: Cavity walls in bricks and hollow concrete blocks. Study of Lift & Escalator manufacturers. Introduction to fundamentals of R.C.C. construction Formwork, scaffolding, shoring and strutting for the building <p>Services</p> <ul style="list-style-type: none"> Principles of Electric installation in smaller building with specific symbols for graphical presentation The study of electrical services-power connection, A.C.& D.C. currents, Distribution boards and types of wiring systems for buildings. Types and components of air conditioning, various ducting layouts, Advancement in air conditioning systems. Difference between Air condition and Air coolers. Day lighting and Day light factor. Distribution of electric power for large projects. Transformers, sub-stations, LT rooms. By laws pertaining to installations and load of electric supply Architectural Drawings - Electrical layout of a residential flat or an office, etc. - Toilet & Kitchen drawings (including layout and sections) <p>Reference Books:</p> <ol style="list-style-type: none"> Engineering Materials, Rangwala S.C, Charotar Publishing House Building Construction, Punmia B.C., Laxmi Publishing Building Construction, Arora, S.P. ,Bindra, Dhanpat rai publications Building Construction, Mackey W.B, Orient Longman Fundamentals of Building Construction, Allen Edward, ohn Wiley & Sons Inc, Somerset, New Jersey, U.S.A., 1998 Electrical Wiring Estimating & Costing, S. L. Uppal.(Khanna Publications),New Delhi
1045003 Structure-IV	<p>Focus:</p> <ul style="list-style-type: none"> Understanding of basic theories and principles of structural analysis. Understanding of properties of materials relevant to structural analysis. <p>Content:</p> <ul style="list-style-type: none"> Design concept of limit state method. Design of Beams: Singly and Doubly reinforced beam, Design of Slab: One Way slab, Two Way slab, One Way and two way Continuous slab

	<p>(based on studio drawings)</p> <ul style="list-style-type: none"> • Design of Column: Axially Loaded (only), • Design of Isolated footing (Only axial loaded) other types of footing drawing. • Design of stair case (Waist slab type) (based on studio drawings) <p>Reference Books:</p> <ol style="list-style-type: none"> 1. Strength of Material, RK Bansal, Laxmi Publications, New Delhi 2. Application Mechanics and Strength of Materials, IB Prasad, Khanna Publications, New Delhi 3. Engineering Mechanics, statics & Dynamics, Desai & Mistry, Mac Millan Publishing Co 4. Vector mechanics for engineers- statics, Bear & Johnston, Mcgrewhill 5. Applied Mechanics, Junarkar & H.J. Shah, Charotar Publishing House 6. Seeking structure from nature, Jeffery Cook, BirkHauser
Subject Code & Subject Name	Description
1045004 History of Architecture-II	<p>Focus:</p> <ul style="list-style-type: none"> • The Architectural Elements, Stylistic features, Symbolism, and Concepts of Space in the Indo Islamic Architecture. <p>Content:</p> <ul style="list-style-type: none"> • Beginnings of Islamic Architecture in India: Mosque (Masjid), Mausoleum (Maqbarah), Mortuary Complex (Rauza) • Development of various regional styles of Islamic Architecture: <ul style="list-style-type: none"> ○ Monuments at Delhi - Kutub-ud-din Aibak and his Slave dynasty, Lodi, Tughlaq and Mughal dynasties, ○ Jaunpur Style, ○ Malwa or Mandu Style, ○ Different Styles at Deccan ○ Monuments at Gujarat- Sultanate and Mughal monuments <p>Reference Books:</p> <ol style="list-style-type: none"> 1. Indian Architecture – Islamic, Percy Brown, Taraporewala Publications 2. Indian Architecture – Islamic, Grover Satish, Vikas Publishing House 3. History of Architecture, Sir Banister Fletcher, Architectural Press
1045005 Computer Applications-I	<p>Focus: Architectural 2D CAD drafting (Auto-Cad), 3-D modelling (Sketch Up) & basic digital presentation techniques</p> <p>Content:</p> <ul style="list-style-type: none"> • Preparation of two dimensional architectural drawings (including plans, elevations and sections) incorporating layers, line-weights, texts, dimensioning and formatting of drawings for taking prints and plots. • Basic three dimensional modelling of architectural layouts imported from AutoCAD to Google Sketch-up <p>Reference Books:</p> <ol style="list-style-type: none"> 1. Applying Autocad 13, Terry Wohlers, Mcgrewhil 2. CAD Principals for Architectural Design, Peter Szalapaj, Architectural Press
1045006 Landscape Architecture	<p>Focus: Principles of landscape design, its techniques and application. Understanding ecology, ecosystem and environmental conservation.</p> <p>Content:</p> <ul style="list-style-type: none"> • Ecology, Environment, Components, Ecosystem at various levels, conservation of natural resources, rainwater harvesting • Elements of Landscape: Landforms, plant materials, water, rocks, lighting etc. • Types of soils, plant materials, trees, shrubs, ground covers, creepers (flowering and non-flowering), rocks, stones and water bodies • Surfacing Materials, landforms, manmade elements. • Historical and contemporary attitudes to landscape in Indian and other context. • Principles of landscape design: surfacing, enclosure vistas, visual corridor,

	<p>composition of plant and other material, etc.</p> <ul style="list-style-type: none">• Preparing landscape design presentation drawing (using symbols etc.) <p>Reference Books:</p> <ol style="list-style-type: none">1. Landscape architecture, J .O. Simonds, Landscape architecture2. The landscape we see, Garrett Eckbo, McGrawhill3. With people in mind: design and management of everyday nature, Kaplan, R., Kaplan, S., Ryan, R, Island Press Washington DC
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