

Scheme of Teaching		
Lectures (Hours)	Practical / Tutorial (Hours)	Studio (Hours)
1	-	8

Scheme of Examination		
Sessionals (Marks)	Theory (Univ. Exam.) (Marks)	Practical / Viva-voce (Univ. Exam.) (Marks)
100	100	50

Examination	
Paper ID (of Univ. Exam.)	Duration (of Univ. Exam.) (Hours)
8542	6x2=12

OBJECTIVES

- To understand and, to apply the principles of architectural composition (organised physical structure) in design.
- Use of appropriate presentation techniques to explain the contents of design.
- Developing drawing, graphic and model making and oral presentation skills.

CONTENTS

- Understanding relationship of human scale, activity, space and form in mono-functional buildings. Suggested studio exercises: Creative design of simple buildings such as Community halls, Restaurants, College Canteens, Reading rooms etc.
- Functional, geometric and visual order of repetitive units. Suggested studio exercises: Design of buildings having primarily horizontal circulation and repetitive units such as nursery and primary schools, Motels, way-side tourist arcades and kiosks.

Note: The studio exercises in addition to the above should also have at least one time problem as a preparation for the examination.

APPROACH:

- Lectures with slide and field visits on similar design. Models to supplement each stage of development of design for greater understanding of Stress on working in the studios and referencing in Library.

Note: The subject will be taught by at least one teacher for every 20 students

NOTE FOR CONDUCT OF EXAMINATIONS

The duration of Examination for this subject is 6x2 =12 hours .The examination shall be held over two days. The drawings completed on the first day shall be left in the examination hall and shall be completed and submitted on the second day.

Scheme of Teaching		
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1	-	6

Scheme of Examination		
Sessionals (Marks)	Theory (Univ. Exam.) (Marks)	Practical / Viva-voce (Univ. Exam.) (Marks)
100	50	50

Examination	
Paper ID (of Univ. Exam.)	Duration (of Univ. Exam.) (Hours)
8543	3

OBJECTIVES

- To introduce and familiarize the students with constituents, manufacturing process / availability, properties/characteristics, defects, classifications and uses of building materials used in construction.
- To understand the use of these building materials in building works.

CONTENTS

MATERIALS

Timber Products	Decorative and Commercial Plywood, Ply-Board, Block Boards, Particle Board, Wood Wool Cement Board, Fibre Board, Compressed Straw Board, Veneers, Laminates, Cement Fibre Board.
Roof Coverings	Clay Tiles (Country, Allahabad, Mangalore tiles etc.), Concrete Tiles, Asbestos Cement sheets (Plain & Corrugated), Aluminum Sheets (Plain & Corrugated), Galvanised Iron Sheets (Plain & Corrugated), Stone Slating, Shingles, Thatch.
Adhesives	Introduction, Natural Adhesives – Animal, Casein, Bituminous. Thermoplastic Adhesives – Polyvinyl Acetate. Thermosetting Adhesives & Plastics - Urea Formaldehyde, Phenol Formaldehyde, Melamine Formaldehyde, Resorcinol Formaldehyde, Epoxide Resins,
Rubber Adhesive.	

CONSTRUCTION

Roofs & Trusses (Timber)	Terminology, Single roof, Double or Purlin roof, Trussed rafter roof, Triple or Framed roof.
Partition, Cladding & Panelling	Terminology, Timber and Timber Products, Clay and Terracotta Brick & Block, Pre-cast Concrete Block, Wood Wool Cement, Compressed Straw Board, Glass and Glass Brick.
Doors & Windows (Timber)	Sliding Door, Sliding- folding door & Revolving Doors.

APPROACH

- The students would be familiarized with vernacular terminology prevalent in this part of the country.
- The emphasis will be on construction details as applicable to Indian conditions.
- Site visits and market surveys will be integral part of sessional work.

Scheme of Teaching		
Lectures (Hours)	Practical / Tutorial (Hours)	Studio (Hours)
2	2	-

Scheme of Examination		
Sessionals (Marks)	Theory (Univ. Exam.) (Marks)	Practical / Viva-voce (Univ. Exam.) (Marks)
50	50	-

Examination	
Paper ID (of Univ. Exam.)	Duration (of Univ. Exam.) (Hours)
8544	3

OBJECTIVES

- To understand the masonry design.
- To understand the reinforcement cement concrete design of structural elements.

CONTENTS

Materials For Concrete	Introduction, Cement, Aggregate, Water, Admixture, Tests on materials, Measurements of materials, Mixing, placing, compaction & curing
Design Philosophies	Introduction, Working stress method, Ultimate load method, Limit state method, Limit state method Vs working stress method, Building code
Definitions	Introduction, Limit state, Characteristic strength, and characteristic load, Design values, Partial safety factors Factored loads, Stress-strain relationship for concrete Stress-strain relationship for steel, Yields stress
Singly Reinforced Beams	Introduction, Bending of beam Assumptions, Moment of resistance, Modes of failure, Maximum depth of neutral axis, Limiting values of tension steel and moment of resistance, minimum and maximum tensions reinforcement, Effective span, Type of problem, Design tables
Doubly Reinforcement Beams	Introduction, Type of problem, Stress in compression reinforcement, design steps. Minimum and maximum reinforcement, Design tables
Flanged Beams:	Introduction, Effective width of flange, minimum and maximum reinforcement
Shear & Development Length	Introduction, Shear stress, Diagonal tension Shear reinforcement, Development length, Anchorage bond, Flexural bond
Detailing of Reinforcement	Introduction, Requirements of good detailing, Cover to reinforcement, Spacing of reinforcement, Reinforcement requirements, Reinforcement splicing
Slabs:	Introduction, One way slab, Two-way slab
Masonry Structures	Introduction, Masonry wall, Design of wall & columns
Foundation	Isolated column footings, Strip footings, Brick masonry wall and, Column footing Design

APPROACH

- The lectures by the experts in the fields will be arranged followed by the tutorial examples

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2	1	-

Scheme of Examination		
Sessionals (Marks)	Theory (Univ. Exam.) (Marks)	Practical / Viva-voce (Univ. Exam.) (Marks)
50	50	-

Examination	
Paper ID (of Univ. Exam.)	Duration (of Univ. Exam.) (Hours)
8545	3

OBJECTIVES

- Understanding of the period in terms of its location, climate as well as the socio-cultural, historical, economic and political influences of the time.
- Study of the building 'types' and the development of architectural form and character based on the developments in construction and technology exemplified through specific building examples that identify the works of the period.
- Understanding the intentions of the period and architects as a solution to the need or demands of the period.

CONTENTS

Introduction:	Introduction and understanding of 'Islam's' philosophy and its interpretation in building type e.g. mosque, tomb, fort and their elements like domes, minarets, arch, squinch etc.
The Sultanate Style:	With reference to the Slave, Khalji, Tughlaq, Sayyid, Lodhis and Shershah Suri regimes (who ruled from Delhi) and their architecture.
Provincial Architecture:	Development of colloquial styles in various provinces of India like Punjab, Jaunpur, Gujrat, Bengal, Bijapur, Bidar and Deccan.
Cities and Citadels:	Morphology of fortified cities of Jaisalmer, fort/ palaces like Mandu, Chittorgarh, Orchha, Datia, Jodhpur etc. with an overview on architectural types like havelis, stepwells, gates, baradaris etc.
Mughal Architecture:	The architecture of the Timurids in India- Babur, Hamayun, Akhbar, Jahangir and Shahjahan.
The Later Moghuls:	The Oudh architecture in Lucknow and its surroundings briefly outlining the Lucknow city.
Colonial Architecture:	The British architecture of the colonial days in India- the capitol at Delhi and the residency at Lucknow emphasizing on their planning criteria and architectural features.

APPROACH

- Lectures to be specifically conducted with the visual aids and seminars presented by students.
- Students will make written assignments and seminar presentations on architectural characteristics that identify the building types and the intentions of the period in response to context and time.
- Students will make free-hand sketches and orthographic drawings in the tutorials of specific building examples to familiarize them with the architectural character that identifies the work of a particular period.
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2	1	-

Scheme of Examination		
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50	50	-

Examination	
Paper ID (of Univ. Exam.)	Duration (of Univ. Exam.) (Hours)
8546	3

OBJECTIVES

- To acquaint the students about human thermal comfort as an essential function of a building and its analysis and use in Architecture.

CONTENTS

Introduction to Climate	Importance of climate in Architecture, Factors affecting climate, Elements of climate, Solar radiation, Temperature, Wind, Humidity and precipitation and their measurement.
Tropical Climate	Climatic zones, characteristics of tropical climate, Macroclimate and Microclimate.
Human Thermal Comfort	Study of body's heat production and heat loss, Comfort zone, Bioclimatic chart and effective temperature, Isopleths.
Shading Devices	Method of recording position of sun in relation to earth, Solar chart, Shadow angle protractor and its application in designing of shading devices.
Day Light	Natural lighting, Glare, day light factor and day lighting in tropics.
Ventilation and Air-movement	Requirement, size and position of openings, Air-flow pattern inside and outside buildings.
Orientation	Orientation of buildings in relation to sun and wind.

APPROACH

- Course would be covered through lectures.
- Tutorials for Practical designing of sunshades/louvers to be carried out in studio and through case studies.

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1	2	-

Scheme of Examination		
Sessionals (Marks)	Theory (Univ. Exam.) (Marks)	Practical / Viva-voce (Univ. Exam.) (Marks)
50	50	-

Examination	
Paper ID (of Univ. Exam.)	Duration (of Univ. Exam.) (Hours)
8547	3

OBJECTIVES

- To understand the basic principles of water supply and sanitation.
- To make them enable to draw the piping system (pipe above ground and under ground) for different types of buildings.
- To familiarize the student with plumbing bye laws as per ISI.

CONTENTS

Water Supply

- Need to protect water supply and requirements of water supply to different types of buildings.
- Sources of water supply, quantity and quality of water and treatment plants.
- Conveyance and distribution of water overhead tank under ground tanks pipe appurtenances.
- Hot and cold water supply system in a low rise and high rise buildings, distribution system in campus, pipes their size, jointing and different fittings.

Sanitary Engineering

- Purpose and principles of sanitation, collection and conveyance of waste matter.
- Quantity and Quality of refuse, design and construction of sewer's and sewer appurtenances, roof and surface water drainage.
- Sanitary appliances, traps their variety, pipes and joints, sanitary pipes works below and above ground level. Drainage in non-municipal area.
- Rain waters storage and water harvesting principles and methods.

System Of Plumbing & Plumbing Bye-Laws

- The water supply and sanitary system individual and group of buildings.
- Indian standards for designing the toilet /Kitchen.
- Plumbing by-laws.

APPROACH

- The emphasis will be on the studio exercise on designing and detailing water supply and drainage in a building, toilet and kitchen.
- The students shall be motivated to visit the practical site.

B. Arch. - Semester – IV **AR-407 Computer Applications to Architecture- IV**

Scheme of Teaching		
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1	3	-

Scheme of Examination		
Sessionals (Marks)	Theory (Univ. Exam.) (Marks)	Practical / Viva-voce (Univ. Exam.) (Marks)
50	-	50

Examination	
Paper ID (of Univ. Exam.)	Duration (of Univ. Exam.) (Hours)
8708*	-

OBJECTIVES

- To develop an understanding of the design based software like Auto Cad, Coral Draw and Adobe Photoshop.
- Learning the application of these software in design exercises so as to make use of maximum commands.

CONTENTS**Understanding AutoCAD**

Learn various 2D commands their function and application.
Understanding coordinate systems.
Working on layers and Colours.
Drawing plans, Elevations, Sections using Auto Cad.
Dimensioning Drawings.
Connecting from one file format to another
Various file formats and their usefulness.

Understanding Coral Draw

Learn various commands their functions and application
Putting text & images together in various settings,
Importing & exporting documents
Learn various commands & their functions and applications

Suggested Exercises

Drawing the entire set of drawings for an already designed residence- using AutoCad.
Design and draw a logo with the help of Coral draw including Textures and Colours.
(May be for use of a letter head.)