GANPAT UNIVERSITY

FACULTY OF ARCHITECTURE DESIGN & PLANNING

Programme	Bachelor of Architecture	Branch/Spec.	INSTITUTE OF ARCHITECTURE
Semester	VI	Version	2.0.0.0
Effective from Academic Year	2021-22	Effective for the batch Admitted in	June 2019
Subject code	2VIA01ADD	Subject Name	Architectural Design & Detailing VI

Teaching scheme						Examination scheme (Marks)			
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	02	02	04	04	12	Theory	-	-	-
Hours	02	-	06	04	14	Practical	40	60	100

Objective

To enable the students to prepare working drawings of an architectural project and imbibe the significance of working drawings from the point of view for execution of the work on site and as important component of tender documents.

Learning Outcome :

LO1: Understanding the difference between conceptual drawing and execution drawing for the site work. Scope and limitations of a different construction material.

LO2: To learn construction method according to different material and represent them into the execution drawing accordingly.

LO3: To resolve minimum compensate with the architectural quality of space when structure of a space comes into a play.

LO4: To resolve and understand various details of staircase, door window of different materials, techniques and finishes and represent them efficiently into the detail execution drawing.

CONTENT AND TEACHING UNIT

Unit	Content	Hrs
1	Introduction to the concept of working drawings and their importance. Graphical presentation of all the components of a building along with dimensioning and annotations. Understand and apply IS Codes and internationally accepted norms / methods of preparing a working drawing along with tabulation of schedules of materials, finishes and hardware.	42
2	Design development and detailing of own design to resolve the design idea to the one which can be executed/ constructed, exposing students to construction parameters, limitation and sequencing.	42
3	Generating a working drawing set for the chosen design/ building with framed/ composite construction including various components and accessories Produce a complete set of working drawings for a chosen design building showing an understanding of structural systems and building engineering services including electrical, PHE, HVAC, Lifts and escalators, Fire safety etc., Interior and Exterior finishes etc.	140

Reference Books

1	Working Drawing details
2	Reference books for Building construction.

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Semester	VI	Version	2.0.0.0
Effective from Academic Year	2021-22	Effective for the batch Admitted in	June 2019
Subject code	2VIA02BMC	Subject Name	Building Materials and Construction - VI

Teaching scheme						Examination scheme (Marks)			
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	2	-	2	2	6	Theory	40	60	100
Hours	2	-	2	2	6	Practical	-	-	-

Objective:

- The primary focus is on interiors of the building and application method according to the materials, usage and aesthetics.
- Students will develop application based understanding of the relationship of interior to construction systems and techniques.
- Understanding contemporary building materials and its application in a building along with its techniques used in different forms and joinery details of construction.

Learning Outcome:

LO1: Understanding contemporary building materials and their application in a building.

LO2: Recognizing different interior related elements based on their materials and its form and application surface.

LO3: Understanding modular design as a modern techniques and its construction techniques.

CONTENT & TEACHING UNITS

Unit	Content	HRS
1	Introduction to Glass as building materials its manufacturing process, types, properties, behavior and failure in different circumstances and application in a building. Introduction to materials like Aluminum Composite Panels (ACP), PVC, CPVC and UPVC and their use in construction.	18
3	Understanding different types of partitions, wall paneling, cladding and Dry wall Technology used in building- their types and methods of construction using various materials.	24
4	Understanding different types of paints and Wall finishes with different materials and techniques of application; Use and different types of curtains and blinds	12
5	Ventilations and skylights in different materials and their operational and fixing details.	12

5	different types of Flooring in house, institutes and Industrial flooring and Factors affecting choice of flooring materials	18
6	Modular unit system and its types and construction details	12
Text Books		
1	NA	
Reference Books		
1	New Architectural Interiors: Architectural design- Mostadi, Arian	
2	Materials: A sourcebook for walls & floors - Torre	
3	Materials and interior design - Brown, Rachael	
4	Materials for Interior Environments - Binggeli, Corky	

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Semester	VI				Version	2.0.0.0			
Effective from Academic Year	2021-22				Effective for the batch Admitted in	June 2019			
Subject code	2VIA03HOA	Subject Name			History of Architecture-V				
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	2	-	-	-	2	Theory	40	60	100
Hours	2	-	-	-	2	Practical	-	-	-

Objective:

- To understand the terms modern, modernity, modernization and trace its meaning and Western : To study and understand cultural, social, geographical aspects which influenced and played vital role in development of the following eras Early Christian Architecture, Byzantine, Romanesque and Gothic architecture.
- Indian: source of Islamic architecture in India, Imperial style, Provincial Style: Deccan, Jaunpur, Gujarat, Kashmir, Mughal.
- To Study various architectural elements, building techniques of specific architectural style.

Learning Outcome:

LO1: To understand architecture as evolving within specific cultural contexts including aspects of geographical location, politics, society, religion and climate. They have a comprehensive knowledge about the philosophy of different eras and how they influenced architecture.

LO2: Understanding of derivation of specific architectural elements construction techniques for local materials availability which became prominent architecture feature of those architectural style.

LO3: 3. The development of construction technology in that period, Architectural ornamentation of that period. To establish a connection between religion and architecture and show how the concepts and beliefs have been manifested in a tangible form.

CONTENT & TEACHING UNITS

Unit	Content	HRS
A	**Architecture of the Western World** Viennese secession, Adolph Loos and debates on ornamentation; Futurism, Expressionism works of Mendelssohn &Taut, Cubism, Constructivism, De stijl and their influence on Architecture. Bauhaus school & Walter Gropius, Modernism and the International style. International style: Oversimplification of the modern Movement into functional, steel and glass, cubes. Monotonous functionalist abstractions and Modernism as a style. Disenchantment of modern cities and fall of modern Movement.	12
B	**Architecture of the Indian sub-continent** The styles and trends of colonial architecture in India. Looking in depth in to styles of	10

	British, French, Dutch, Portuguese architecture and its influences in India and their evolution. The impact of Hindu and Indo- Sarsanic style on the British architecture in India. The characteristics of British colonial architecture with examples from the works of Edwin Lutyen. The impact of International style of architecture in India, Early public buildings such as Vigyan Bhawan Supreme Court building etc. The works of Le-Corbusier and Louis Kahn in India with examples. Their impact on architecture of fifties and sixties architecture style.	
C	**Works of Modern Masters in Indian sub-continent** The trend in Indian architecture after 1970 Principles and works of the following architects: Balakrishna Doshi, Charles Correa, Anant Raje and Laurie Baker, Achyut Kanvinde, Raj Rewal with suitable examples. Building Material in contemporary	10

Text Books	
1	A History of Architecture - Sir Banister Fletcher
2	A global history of Architecture - Francis D.K. Ching
3	Classical Architecture for the Twenty-first Century- Jean-Francois Gabriel,
4	Meaning in Western Architecture - Norberg-Schulz Christian
Reference Books	
1	Understanding Architecture: Its elements, history and meaning - Leland M Roth
2	World History of Architecture - Micheal Fazio
3	The Story of Architecture FROM ANTIQUITY TO THE PRESENT / Jan Gympel / KÖNEMANN (Pb)
4	Space, time and Architecture- Sigfried Giedion

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Semester	VI	Version	2.0.0.0
Effective from Academic Year	2021-22	Effective for the batch Admitted in	June 2019
Subject code	2VIA04SDS	Subject Name	Structural Design and Systems VI

Teaching scheme						Examination scheme (Marks)			
(Per week)	Lecture (DT)		Practical (Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	2	-	-	-	2	Theory	40	60	100
Hours	2	-	-	-	2	Practical	-	-	-

OBJECTIVE:

- This subject is applications of structural engineering principles to design basic structural elements using of steel as materials.
- This subject is specifically aim to develop understanding of various design philosophy, Indian codal provisions, design basis used in design of basic elements of steel frame structures and its detailing requirement.

LEARNING OUTCOME**:**

LO1: Understand various design philosophy to be used in the design of structural elements.
LO2: Evaluate the loading conditions and to calculate loads as per IS Specifications.
LO3: Explain various design philosophies understand analytical approach to be used in the design of structural elements.
LO4: Propose design of basic structural elements like connection, slab, beams, columns, truss and foundation etc. using steel as materials using limit state approach.

CONTENT & TEACHING UNITS

Unit	Content	Hrs
1	**INTRODUCTION:** Mechanical properties of Structural Steel, Structural Sections- rolled beams, channels, angles, etc. Loads & load combinations, Methods of Analysis, Codes & specifications, Design Philosophies - Working stress Method, Ultimate Load Method, and Limit State Method.	02
2	**TYPES OF CONNECTIONS (RIGID AND PINNED CONNECTION):** Bolted Connections- Definition of riveted joints, rivet strength and capacities, Design of Bolted Connections. Welded Connections - Weld shapes, types and symbols allowable stresses in weld material, Fillet and Butt weld, Design of Welded Connections. Design of simple connections such as lap and butt joints, truss joint connections.	04

3	**AXIAL FORCE DESIGN: Tension member-** types of tension member, behavior, modes of failure, Slenderness ratio. Analysis and design of axially loaded tension member made up of angle section, splices, Lug angle.	04
4	**COMPRESSION MEMBER-** behaviour, classification of sections, possible modes of failure, elastic buckling of slender member, design of compression member having single & built-up section. Importance of bracing: Objectives of lacing, single lacing, double lacing, IS-800-2007 requirement for lacing system. Objectives of batten. IS-800-2007 requirement for battening system. Columns with lacing and battens.	06
5	**DESIGN FOR BEAMS AND BEAM-COLUMNS:** Type of sections, classification, Lateral stability, Design strength of laterally restrained and unrestrained beams, shear strength, deflection, web buckling & crippling, Design of simply supported beam. Combined axial and flexural design of member (Beam-Column)	06
6	**DESIGN OF A SIMPLE ROOF TRUSS:** Steel trusses, its types, geometry, spans, pitches, spacing etc. Various loads on a roof truss. i.e., Dead, Imposed & Live Load. Analysis & Calculation of Dead load, Live load & wind Load. Analysis of a truss under various loads and Design of a truss members.	06
7	**DESIGN OF FOOTING:** Introduction to footings for steel columns, Slab based and gusseted based. **CONCEPTUAL STUDY OF GENERAL CONNECTIONS:** Beam to beam connections, Beam to column connections, Column to column connections, and Column to foundation connection.	04

TEXT BOOKS	
1	NA

REFERENCE BOOKS	
1	N. Subramanian; Steel Structures, Oxford Publication.
2	Dayaratnam P.; Design of Steel Structures; Wheelor pub. co., Delhi
3	Ramamrutham S. & Narayanan R.; Design of Steel Structures; Dhanpatrai & Sons, Delhi
4	S. S. Bhavikatti, Design of Steel Structures: By Limit State Method as Per IS: 800-2007, I K International Publishing House Pvt. Ltd
5	IS: 875 (Part I to V) - Code of practice for structural safety of Buildings Loading standards.
6	IS 800:2007, General Construction In Steel - Code of Practice, Bureau of Indian Standards, New Delhi.

LIST OF TUTORIALS:

1. Development of spread sheets for design of various structural components of steel structure.
2. Draw plan and elevation of different types of trusses with details, built up column.
3. Design and testing of steel beam section.
4. Prepare model of various connections/elements in steel structures.
5. Prepare model for detailing of beam column junction and column-footing junction or any one steel

Structure of the syllabus.

Programme	Bachelor of Architecture				Branch/Spec.	INSTITUTE OF ARCHITECTURE		
Semester	VI				Version	2.0.0.0		
Effective from Academic Year		2021-22			Effective for the batch Admitted in			June 2019
Subject code	2VIA05BS	Subject Name			Building Services IV			
Teaching scheme					Examination scheme (Marks)			
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	2	-	-	-	2	Theory	40	60	100
Hours	2	-	-	-	2	Practical	-	-	-

Objective:

Introduction to Toilet and Kitchen in detail.

Learning Outcome:

LO1: Understanding the importance of each service in details with its designing criteria, its standards measurements, its appliances measurements through live case studies and onsite drawings.

LO2: To adapt newer and latest technology and equipment's for modern and fundamental requirement of this services and also High tech applications and services to be implemented for all type of functional areas like residential, commercial, corporate and Industrial.

LO3: The brief understanding and importance of Toilet and Kitchen services in our routine life and how we can smoothly design it with the help of details study about the services.

LO4: The brief understanding of how to read and make the working drawings of the following services on site and the importance of this drawings in professional field.

Theory syllabus

Unit	Content	Hrs
1	Toilet details : Concept and application of Toilet layout, Types of Toilets according to the use of the toilet, Systemic approach of its Design, its appropriate size, shape etc varies according to its use and design, its section and Tiles details	16
2	Kitchen Details : Concept and application of Kitchen layout, Types of Kitchen, Systemic approach of its Design, its appropriate size, shape etc varies according to its use and design, its platform Details using sandwich platform, sections, Sizes of all appliances used in the kitchen.	16

Practical content

Site Visits & Case Studies of above topics.
Presentations, Live case studies, Debates & Discussions related to the above syllabus

Text Books

1	Bathroom bagni - Pietro
2.	Time - Saver Standard For Building Materials & Systems -- Watson
3.	Sanitation Details - English, Hardcover, Woolley Leslie
4.	Ultimate Kitchen Design - Alejandro Bahamon

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Programme	Bachelor of Architecture	Branch/Spec.	INSTITUTE OF ARCHITECTURE
Semester	VI	Version	2.0.0.0
Effective from Academic Year	2021-22	Effective for the batch Admitted in	June 2019
Subject code	2VIA06LA	Subject Name	Landscape Architecture

Teaching scheme						Examination scheme (Marks)			
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	2	-	-	-	2	Theory	40	60	100
Hours	2	-	-	-	2	Practical	-	-	-

Objective:

- The primary focus is to introduce the students to Landscape architecture & its relevance and impact on Architecture.
- Students will understand the relationship between the built and the un-built neighbourhood
- To develop the understanding of students regarding site and site planning

Learning Outcome:

LO1: Understanding use site analysis information to propose appropriate site planning and landscape design.

LO2: Recognizing ecological and geomorphological characteristics of a site.

LO3: To develop the skill to integrate landscape with the built form

CONTENT & TEACHING UNITS

Unit	Content	HRS
1	Ecosystem And Landscape: Introduction to Landscape Design and its History, Information about different types of trees, Plants, shrubs, grass and creepers, Drawing and representation of landscape and elements of it, evolution of scales & type of landscapes over time, Effect of landscape elements on Climate and Architecture.	10
2	Site analysis: Learning about topography and prevailing features; natural slopes and drains; soil types; survey of existing vegetation and tree, Relation between soft scape and hardscape and transitional spaces	06
3	Landscape design: Landscape principles and elements of landscape design; history of garden design; principles of landscape development; plant selection and its placement in landscape.	08
4	Execution of Landscape design: Introduction to irrigation system and techniques to grow plants, indicating the use of different landforms and application of various materials and street furniture in a landscape in accordance with immediate	08

	surrounding	
Text Books		
1	NA	
Reference Books		
1	An Introduction to Landscape Architecture - Michael Laurie	
2	An introduction to the study of landscape design - Hubbard, Henry Vincent	
3	Fundamentals of Landscaping and Site Planning - James B. Root	
4	Tropical Garden Plants in Colour - Bimal Das Chowdhury, T.K Bose	
5	Site Planning - Kevin Lynch.	

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Semester	VI	Version	2.0.0.0
Effective from Academic Year	2021-22	Effective for the batch Admitted in	June 2019
Subject code	2VIA07PE	Subject Name	Professional Elective –IV (Conservation Architecture)

Teaching scheme						Examination scheme (Marks)			
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	-	-	2		02	Theory	-	-	-
Hours	-	-	2		02	Practical	40	60	100

Objective:

- Introduction to Conservation and Architectural Conservation.
- Emergence of Conservation as a Subject and as a Profession
- To understand the basic Principles of Conservation.
- Understanding form global and Indian case studies.

Learning Outcome:

LO1: The recognition and protection of the historic environment to gain awareness

LO2: Understands the techniques and the theoretical framework to protect Cultural Heritage.

CONTENT & TEACHING UNITS

Unit	Content	HRS
1	Introduction to Programming of Architectural Conservation Projects Appreciation and Identification of Values related to Heritage and Culture – their Interpretation and Presentation; Concept of Ethics and Authenticity; Degrees of Intervention; basic Principles of Conservation viz., Preservation, Restoration, Reuse, Rehabilitation, Regeneration, Revitalization, Up gradation, Redevelopment	06
2	Emergence of Conservation as a Subject and as a Profession – History of ASI; History of Conservation Movement in UK, Italy; History of Conservation Movement in India	06
3	Global and National Heritage Management Notions – Conservation Legislation in India vis-à-vis that in Europe; World Heritage Sites – recognition criteria, status after inscription; ICOMOS Charters e.g., Venice, Burra, Florence; Pilot Projects of Architectural Conservation in India and Europe	08
4	History, Theory and Criticism of Architecture – Re-introduced as a view point to understand built heritage of India.	06

5	Developing an appropriate methodology for qualitative assessment of a heritage resource and suggest relevant strategies for interpretation and presentation.	04
6	Critical Judgment of architecture through traditional, historical and contemporary examples and case studies.	02

Reference Books	
1	Guidelines for Conservation – A Technical Manual, INTACH, Feilden, Bernard
2	Concepts and Responses, Kapila Vatsayayan, IGNCA, N Delhi, 1992
3	Conservation and Planning, Allan Dobby

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Programme	Bachelor of Architecture					Branch/Spec.	INSTITUTE OF ARCHITECTURE		
Semester	VI					Version	2.0.0.0		
Effective from Academic Year	2021-22					Effective for the batch Admitted in	June 2019		
Subject code	2VIB08SP	Subject Name				SUMMER PROGRAMME-III			
Teaching scheme						Examination scheme (Marks)			
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	NA					Theory			
Hours	**1.5 / 2 Week, Block Course**					Practical	ATTENDANT/ NOT ATTENDANT		

Objective:

The Summer Programme (SP) at the Institute of Architecture is a unique contribution to Architectural education. Initially called measure drawings, it is intended to take the students out into the field to get first-hand experience of traditional built environments. This subject recognizes the value of the traditional architecture as well as the importance of field experiences and travel in the learning of architecture. The students are encouraged to learn about not only the architectural form also related components of architectural relevance.

Learning Outcome:

LO1: Students will get the understanding of "synthesis of learning from various courses" by observing; registering & mapping of actual built buildings.

LO2: Programme outcome will be extremely valuable in creating knowledge base on architecture field not only in India but of nearby countries as well.

LO3: Production of Accurate and precise drawings of many a monument, institution, settlement in India, which become a basis for future research.

CONTENT

Unit	Content	HRS
	This summer workshop aims at creating understanding of inherent form and order in the built environment by observing it and analyzing by sketching and measure drawing. Hand sketch also gives an opportunity to students for examining the systems, scale and architectural language of the built. Students came back at institute and make the final Drawings and report within remaining days.	

Text Books

	NA

Reference Books

	NA

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TEACHING AND EXAMINATION SCHEME

Programme	Bachelor of Architecture	Branch/Spec.	ARCHITECTURE
Semester	VI		
Effective from Academic Year	2021-22	Effective for the batch Admitted in	June 2019

Subject Code	Subject Name	Teaching scheme												Examination scheme (Marks)					
		Credit						Hours (per week)						Theory			Practical		
		Lecture (DT)			Practical (Lab.)			Lecture (DT)			Practical (Lab.)			CE	SEE	Total	CE	SEE	Total
		L	TU	Total	P	TW	Total	L	TU	Total	P	TW	Total						
2VIA01ADD	Architectural Design & Detailing VI	2	2	4	4	4	8	2	2	4	6	4	10	-	-	-	40	60	100
2VIA02BMC	Building Materials and Construction VI	2	-	2	2	2	4	2	-	2	2	2	4	-	-	-	40	60	100
2VIA03HOA	History of Architecture V	2	-	2	-	-	-	2	-	2	-	-	-	40	60	100	-	-	-
2VIA04SDS	Structural Design and Systems VI	2	-	2	-	-	-	2	-	2	-	-	-	40	60	100	-	-	-
2VIA05BS	Building Services IV	2	-	2	-	-	-	2	-	2	-	-	-	40	60	100	-	-	-
2VIA06LA	Landscape Architecture	2	-	2	-	-	-	2	-	2	-	-	-	40	60	100	-	-	-
2VIA07PE	Professional Elective IV	-	-	-	2	-	2	-	-	-	2	-	2	-	-	-	40	60	100
2VIB08SP	SUMMER PROGRAMME-III	1 WEEK TOUR						Attendant / Not Attendant											
Total		12	2	14	8	6	14	12	2	14	10	6	16	-	-	-			