SIDDAGANGA INSTITUTE OF TECHNOLOGY, TUMAKURU
School of Architecture

Vision

To establish as a pioneer institute in planning and design of built environment through excellence in teaching, research, consultancy and design innovation.

Mission

- To create conducive academic ambience that nurtures aesthetic attitude, technical confidence, and critical thinking among students.

- To develop research and design innovation skills in students to address various societal needs.

- To inculcate professional ethics based on values and entrepreneurial skills among students.

Program Educational Objectives (PEO's)

Graduates from school of Architecture will achieve the following Program Educational Objectives within few years of graduation

- Graduates will showcase capabilities for competent practice of Architecture and enhance career by pursuing higher education
- Graduates will exhibit strong design skills to solve complex real-time problems through high technical skills and strong communication along with the knowledge of various domains of architecture including landscape, architectural conservation, interior design, energy conscious architecture, urban design and planning, construction project management, alternative building techniques, building information modeling and digital architecture
- Graduates will demonstrate professionalism, ethical conduct, societal concerns, effective team work and adapt to dynamic global and local needs engaging in lifelong learning

Program Specific Outcomes (PSO's)

PSO1: Develop critical thinking to analyze, evaluate, synthesize and generate appropriate design solutions for varying scales and levels of complexity.

PSO2: Explore possibilities and application of various building materials, construction techniques, building systems and services.

PSO3: Draw inspiration from divergent architectural theories and history along with varied indigenous and vernacular settings.

PSO4: Demonstrate effective communication skills to present architectural works and comprehend professional practice.

Programme Outcomes (PO's)

1. **Architectural Knowledge:** Apply the knowledge of design principles, building systems & technologies, humanities and environmental aspects in design, planning and construction.
2. **Problem Analysis**: Identify, formulate, review research literature and analyse various scales of architectural projects to arrive at tangible conclusions.
3. **Design/ Development of solutions:** Design solutions to integrate interdisciplinary approach for contextual issues pertaining to built-environment.
4. **Conduct investigations of complex problems:** Use research-based knowledge and methodologies including context analysis, case studies, project requirements and synthesis of the information to provide context sensitive solutions.
5. **Modern tool usage:** Identify, select and apply the appropriate tools, techniques and resources to predict, design and simulate qualitative and quantitative outcomes with an understanding of its limitations.
6. **The Architect and Society:** Apply reasoning to address socio-cultural, legal and safety aspects relevant to the professional practice and social responsibility.
7. **Environment and Sustainability:** Understand the importance of the architectural design solutions in environmental and social contexts to demonstrate the need for sustainable built environment.
8. **Ethics:** Apply ethical principles and commit to professional ethics, responsibilities and norms of Architectural profession.
9. **Individual and teamwork:** Function effectively as an individual as well as a team member or a leader in diverse interdisciplinary settings.
10. **Communication:** Comprehend and effectively communicate issues related to architecture, community and society at large through documentation, graphical and verbal presentations.
11. **Project management and Finance:** Demonstrate knowledge and understanding of professional and management principles to apply to individual work, as a team member and as a leader, to manage projects in multidisciplinary environments.
12. **Life-Long learning:** Recognize the need for, have the preparation and ability to engage in independent and lifelong learning in the changing domain of societal and technological advancement and adopt it in individual's professional practice.

SYLLABUS

FOR

III and IV semester B.ARCH

2026 -2027

School of Architecture

Siddaganga Institute of Technology

(An Autonomous Institution affiliated to V.T.U., Belagavi, Approved by AICTE, New Delhi Accredited by NAAC with 'A++' Grade and ISO 9001:2015 Certified)

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SIDDAGANGA INSTITUTE OF TECHNOLOGY, TUMAKURU

(An Autonomous Institution affiliated to VTU, Belagavi, Approved by AICTE, New Delhi, Accredited by NAAC with 'A++' Grade & ISO 9001:2015 Certified)

B.ARCHITECTURE

SCHEME OF TEACHING AND EXAMINATION (270 Credits Scheme)

(Applicable to the students admitted during 2025-26)

III Semester

Sl. No.	Course and Course Code		Course Title	Teaching / Paper setting Dept.	Teaching hrs/week						Examination					Credits
					Lecture	Studio		Practical	Tutorial	Self Study	Duration in hrs.	Mode of Exam	CIE Marks	SEE Marks	Total Marks	
						Core	Applied									
					L	S		P	T	SS						
1.	PCC	3ATS01	Architectural Design-II			8						Viva	50	50	100	**8**
2.	BSAE	3ATS02	Building Materials and Construction-III		1	3						Viva	50	50	100	**4**
3.	SEC	3ATS03	Computer Applications in Architecture					2				Term Work	50	50	100	**2**
4.	PCC	3ATT01	History of Architecture-III		3						3	Theory	50	50	100	**3**
5.	BSAE	3ATT02	Building Services-I (Water Supply and Sanitation)		3						3	Theory	50	50	100	**3**
6.	BSAE	3ATT03	Climatology		3						3	Theory	50	50	100	**3**
7.	BSAE	3ATT04	Building Structures-II	Civil	3						3	Theory	50	50	100	**3**
8.	AEC	3ATPE	Professional Elective-I: Architectural Photography (ATPE01) / Visual Communication (ATPE02) / Vernacular Architecture (ATPE03)				2					Viva	50	50	100	**2**
9.	HSMC	SHS01-AT	Social Connect and Responsibilities	Any Dept.	1							-	100	-	100	**1**
10.	NCMC	PMC1	National Service Scheme	PE				2			-	-	100	-	100	**0**
		PMC2	Sports													
		PMC3	Yoga and Pranayama													
		PMC4	Music													
			Total		14	11	2	4					**600**	**400**	**1000**	**29**

Note: PCC: Professional Core Course, **BSAE**: Building Science and Applied Engineering Course, , **INT** –Internship,
HSMC: Humanity and Social Science & Management Courses, , **SEC** –Skill Enhancement Courses. **AEC**- Ability Enhancement Course **UHV**- Universal Human Value Courses

L –Lecture, **S**- Studio, **P**-Practical, **SS** – Self-Study Component, **CIE**: Continuous Internal Evaluation, **SEE**: Semester End Examination

SIDDAGANGA INSTITUTE OF TECHNOLOGY, TUMAKURU

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B.ARCHITECTURE

SCHEME OF TEACHING AND EXAMINATION (270 Credits Scheme)

(Applicable to the students admitted during 2025-26)

IV Semester

Sl. No.	Course and Course Code		Course Title	Teaching / Paper setting Dept.	Teaching hrs/week						Examination					Credits
					Lecture	Studio		Practical	Tutorial	Self Study	Duration in hrs.	Mode of Exam	CIE Marks	SEE Marks	Total Marks	
						Core	Applied									
					L	S		P	T	SS						
1.	PCC	4ATS01	Architectural Design-III			8						Viva	50	50	100	**8**
2.	BSAE	4ATS02	Building Materials and Construction-IV		1	3						Viva	50	50	100	**4**
3.	SEC	4ATS03	Building Information Modeling-I					3				Term Work	50	50	100	**3**
4.	BSAE	4ATS04	Design of RCC Structures		1			2				Viva	50	50	100	**3**
5.	SEC	4ATT01	History of Architecture-IV		3						3	Theory	50	50	100	**3**
6.	PCC	4ATT02	Building Services-II (Electrical and Illumination)		3						3	Theory	50	50	100	**3**
7.	PEC	4ATPE	Professional Elective-II	Craftsmanship in Wood Working (ATPE04)			2					Viva	50	50	100	**2**
				Architectural Documentation (ATPE05)												
				Art Appreciation (ATPE06)												
8.	HSMC	SHS02-AT	Universal Human Values		Any Dept.	1						-	100	-	100	**1**
9.	NCMC	PMC1	National Service Scheme		PE			2			-	-	100	-	100	**0**
		PMC2	Sports													
		PMC3	Yoga and Pranayama													
		PMC4	Music													
			Total		9	11	2	7					**550**	**350**	**900**	**27**

Note: PCC: Professional Core Course, **BSAE**: Building Science and Applied Engineering Course, , **INT** –Internship,
HSMC: Humanity and Social Science & Management Courses, , **SEC** –Skill Enhancement Courses. **AEC**- Ability Enhancement Course **UHV**- Universal Human Value Courses

L –Lecture, **S**- Studio, **P**-Practical, **SS** – Self-Study Component, **CIE**: Continuous Internal Evaluation, **SEE**: Semester End Examination

SIDDAGANGA INSTITUTE OF TECHNOLOGY
Tumakuru-572103

(An Autonomous Constituent Institution of Visvesvaraya Technological University, Belagavi)

SCHOOL OF ARCHITECTURE

DETAILED SYLLABUS FOR
THIRD SEMESTER
B. ARCHITECTURE

ARCHITECTURAL DESIGN - II

Contact Hours/Week	:	08	Credits	:	8
Total Lecture Hours	:	-	CIE Marks	:	50
Total Studio Hours	:	112	SEE Marks	:	50
Course Code	:	3ATS01	Exam Mode	:	Viva

Course objectives:
This course will enable students to:

1.	Develop a nuanced understanding of the concept of place as a complete human spatial experience shaped by both tangible and intangible factors.
2.	Study how environmental and contextual elements—such as climate, ecology, materiality, and orientation—affect spatial perception and architectural atmosphere.
3.	Explore tools and methods like bubble diagrams and proximity charts for analyzing spatial configuration and user activity relationships.
4.	Cultivate the ability to interpret user needs and community dynamics for designing contextually sensitive, purpose-driven built environments.
5.	Encourage critical thinking and creative expression through hands-on projects that investigate and articulate the Sense of Place.

Course Outline

- While space is created by physical and notional boundaries, place is characterized by the forces that signify it with an "architectural atmosphere". We could attempt to describe place as the complete human spatial experience - the spectrum of how one studies a place ranges from the abstract, physical/formal place, to the one that lives in one's mind and memories.

- Studies of how scale, proportions, physicality (including exposure of walls, roofs, windows to the sun), direction of winds and breeze, local ecology (animal and plant life), relationships with local water bodies and groundwater, materiality and situation, affect a place and how it is perceived.

- Relationship between spatial configuration and activity related functions – Understanding and interpretation of user requirements. Introduction to bubble diagrams, proximity charts etc.

- The project shall address the study, exploration and expression of the Sense of Place in all its aspects. Projects include but not limited to temporary shelters, pavilions, informal social open spaces, context specific community driven built forms like health centres, Day care centre, Primary school, etc.

Note

a. Relevant case studies and literature studies can be given by the studio teachers and report must be compiled by the students.
b. Experiential learning - An attempt to understand the experience of a space that can enable a person to define its particularities as a place. An understanding of being "inside" that place, versus "outside" it, needs to be explored. The interrelation and interface of formally designed spaces and informal spaces must also be included since both in tandem make up our built environment.
c. Studies of less tangible aspects of a place, like identity, belonging, memory, and stories, through discussions, documentation, and other media.

d. Minimum of two architectural projects must be tackled in the semester.
e. One of the design exercises can be carried out as group work to explore possibilities of students working as teams.
f. Projects to be presented with help of drawings, sketches, and models. Application of techniques learnt in architectural presentation must be incorporated.

REFERENCE BOOKS

1.	Steen Eiler Rasmussen	Experiencing Architecture, Second Edition, MIT Press, 1964, ISBN: 9780262680028, 0262680025
2.	Edward Relph	Place and Placelessness, Pion, 2008, ISBN: 9780850861761, 0850861764
3.	David Seamon	Life Takes Place: Phenomenology, Lifeworlds, and Place Making, Taylor & Francis, 2018, ISBN: 9781351212496, 1351212494
4.	Yi-fu Tuan	Space and Place: The Perspective of Experience, University of Minnesota Press, 1977, ISBN: 9780816608843, 0816608849
5.	Gaston Bachelard	The Poetics of Space, Penguin Publishing Group, 2014, ISBN: 9780698170438, 0698170431
6.	D'Arcy Wentworth Thompson	On Growth and Form, Volume 2, University Press, 2009
7.	Hilde Heynen	Architecture and Modernity: A Critique, MIT Press , 2000, ISBN: 9780262581899, 0262581892
8.	Tim Cresswell	Place: An Introduction, Wiley, 2015, ISBN: 9780470655627, 0470655623
9.	Ato Quayson	The Cambridge Companion to the Postcolonial Novel, Cambridge University Press, 2016, ISBN: 9781107132818, 1107132819
10.	Peter Zumthor	Atmospheres :Architectural Environments, Surrounding Objects, Birkhäuser, 2017, ISBN: 9783764374952, 3764374950
11.	Christian Norberg-Schulz	Genius Loci: Towards a Phenomenology of Architecture, Rizzoli, 2011, ISBN: 9780847802876, 0847802876
12.	Christopher Alexander	The Timeless Way of Building, Volume 8, Oxford University Press, 1979, ISBN: 9780195024029, 0195024028
13.	Doreen Massey	For Space, SAGE Publications, 2005, ISBN: 9781412903615, 1412903610
14.	Christian Norberg-Schulz	Architecture: Presence, Language, Place, Monacelli Press, Incorporated, 1997, ISBN: 9781885254474, 1885254474
15.	Peter Zumthor Maureen Oberli-Turner	Thinking architecture, Lars Müller, 1998, ISBN: 9783907044612, 3907044614

Course Outcomes:
Upon completion of this course the student will be able to:

CO1	Distinguish between space and place, and articulate how human perception, memory, and atmosphere contribute to spatial identity.
CO2	Demonstrate the ability to assess the influence of environmental and physical parameters on the character and function of architectural spaces.

CO3	Summarize analytical tools like bubble diagrams and proximity charts to map user needs and spatial relationships.
CO4	Design small-scale architectural interventions that reflect sensitivity to local context, community needs, and ecological conditions.
CO5	Create thoughtful design proposals that communicate a deep engagement with the social, cultural, and environmental dimensions of place-making.

Course Articulation Matrix

		POs												PSOs			
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
COs	**CO1**		2											2			
	CO2		2											3			
	CO3		2		2									3			
	CO4			3		3		3						3			
	CO5										2			2			

BUILDING MATERIALS AND CONSTRUCTION - III

Contact Hours/Week	:	04	Credits	:	4
Total Lecture Hours	:	15	CIE Marks	:	50
Total Studio Hours	:	45	SEE Marks	:	50
Course Code	:	3ATS02	Exam Mode	:	Viva

Course objectives: This course will enable students to:	
1.	Get familiar with the building materials related to RCC.
2.	knowledge of construction practices related to various RCC components of a building.
3.	Understand the various types of paints used in construction industry.

UNIT I
Introduction to RCC: Qualitative understanding of basic thermal properties such as conduction, insulation, thermal mass and the material's appropriateness and/or demerits for hot climates. **Principles and methods of construction:** RCC slabs - one way, one way continuous, two way and two ways continuous.
14 Hours

UNIT II
Principles and methods of construction: RCC slabs – Cantilever and Sloping slabs.
14 Hours

UNIT III
Introduction to Vaults & domes: Qualitative influence of domes and vaults on building's interaction with solar heat and ventilation. **Principles and methods of construction:** Masonry vaults and domes. **Principles and methods of construction:** RCC vaults and domes.
14 Hours

UNIT IV
Introduction to Floor finishes and wet Cladding: Mud flooring, Murrum flooring, and Stone flooring in marble, granite, tandur/kota stone, other flooring in mosaic, terrazzo, ceramic tiles, wooden flooring and polished concrete, low embodied (grey) energy and sustainable flooring. Wet cladding in stone, marble, etc. including toilet cladding. **Introduction to Paving:** Cast in situ concrete including vacuum dewatered flooring, concrete tiles, interlocking blocks, clay tiles, brick and stone.
10 Hours

UNIT V
Introduction to Paints: Materials – Paints, varnishes and distempers, emulsions, cement based paints, external reflective paints, and natural paints. Constituents of oil paints, characteristics of good paints, types of paints and process of painting different surfaces. Types of varnish, methods of applying varnish and French polish and melamine finish. **Method of plastering (Internal and External):** smooth, rough, textured, grit plaster etc. Use of various finishes viz., lime, cement, plaster of Paris, buffing etc.
8 Hours

Note
a. Building construction guidelines to be referred from National building code (NBC) 2026. b. Lecture on the impact of cement and its products for energy conservation. c. Integrate with Architectural Design studio. d. Site visits to cement manufacturing plant, concreting construction site and RMC batching plant be arranged by studio teachers and report to be compiled by students. e. Market survey of materials should be carried out by students. **f.** The entire portfolio on construction and materials shall be presented for viva.

REFERENCE BOOKS		
1	Roy Chudley	Construction Technology, Longman Scientific & Technical, 1987, ISBN 9780582014527, 0582014522
2	Robin Barry	The Construction of Buildings (Foundations and oversite concrete, walls, floors, roofs), Blackwell Science, 1996, ISBN 9780632041077, 0632041072
3	Sushil Kumar	Building construction, Standard Publishers Distributors Delhi, 2001, ISBN 9788186308868, 8186308865
4	Roy Chudley, Roger Greeno, Karl Kovac	Chudley and Greeno's Building Construction Handbook, CRC Press, 2020, ISBN: 9780429648779

Course Outcomes: Upon completion of this course the student will be able to:	
CO1	Summarize the properties and applications of RCC construction.
CO2	Develop the construction details of various RCC slabs.
CO3	Analyze the influence of vaults & domes on solar heat and ventilation.
CO4	Identify the various flooring and paving materials used in construction.
CO5	Summarize the various methods of plasters and paint finishes for buildings.

Course Articulation Matrix

		POs												**PSOs**			
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
COs	**CO1**	3											3		3		
	CO2	3											3		3		
	CO3	3						3					3		3		
	CO4	3											3		3		
	CO5	3											3		3		

COMPUTER APPLICATIONS IN ARCHITECTURE

Contact Hours/Week	:	02	Credits	:	2
Total Lecture Hours	:	-	CIE Marks	:	50
Total Practical Hours	:	30	SEE Marks	:	50
Course Code	:	3ATS03	Exam Mode	:	Term Work

Course objectives:	
This course will enable students to:	
1.	Get introduced to digital drafting, modelling, and presentation techniques used in architecture
2.	Understand the fundamentals of computer applications and digital tools for architectural drafting and visualization
3.	Familiarize with digital workflows and AI-assisted tools for effective architectural representation and presentation

UNIT I
Introduction to Computer-Aided Drafting: Introduction to AutoCAD interface, coordinate systems (Absolute, Relative Rectangular, and Relative Polar), drawing setup, templates, drafting standards, line types, line weights, colours, layers, and basic drawing and modification tools
6 Hours

UNIT II
Architectural Drafting and Advanced Tools: Preparation of architectural plans, elevations, and sections. Advanced drafting tools including arrays, polyline editing, layer management, annotation, tables, leaders, blocks, external references (Xrefs), quick measure, view options, raster image insertion, Geolocation, importing and scaling images.
6 Hours

UNIT III
Drawing Management and Presentation: Inquiry commands, grouping, DWG comparison, viewport settings, sheet layout, plotting at different scales, and preparation of presentation drawings. Introduction to rendering of AutoCAD drawings using Adobe Photoshop or equivalent image editing software.
6 Hours

UNIT IV
Three-Dimensional Modelling: Introduction to SketchUp or equivalent 3D modelling software. Importing AutoCAD drawings, creation of massing models, detailed architectural models, materials, scenes, and basic visualization techniques.
6 Hours

UNIT V
AI-Assisted Design Tools: Introduction to AI and Generative AI, prompt engineering; AI-assisted research, documentation and visualization, ethical use, validation of AI-generated outputs.
6 Hours

Note	
1	Portfolio of exercises and assignments containing reports, CAD drawings, and Presentation drawings done in the class to be submitted for progressive marks and SEE.

REFERENCE BOOKS		
1	George Omura and Brian C. Benton	Mastering AutoCAD 2025 and AutoCAD LT 2025, Sybex (Wiley), 2024. ISBN - 9781394247394
2	Sham Tickoo	AutoCAD 2025 for Designers, CADCIM Technologies, 2024. ISBN : 9781640571884
3	Matt Donley	SketchUp for Architecture, 2nd Edition, Routledge, 2023, ISBN : 9781032264905
4	Marian de Waard	Photoshop for Architecture, BIS Publishers, 2015. ISBN : 0133505707, 9789063693589
5	Neil Leach	Architecture in the Age of Artificial Intelligence: An Introduction to AI for Architects, Bloomsbury Visual Arts, 2022. ISBN : 9781350244924

Course Outcomes:
Upon completion of this course the student will be able to:

CO1	Apply computer-aided drafting tools and coordinate systems to prepare accurate two-dimensional architectural drawings.
CO2	Develop architectural drawings using advanced drafting tools, annotation techniques, and drawing management features.
CO3	Demonstrate drawing management, plotting, layouts, and presentation techniques using CAD and image-editing software.
CO4	Generate three-dimensional architectural models and visualizations using SketchUp or equivalent modelling software.
CO5	Interpret the applications of AI-assisted design tools in architectural visualization, presentation, and professional practice

Course Articulation Matrix

		POs												PSOs			
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
COs	CO1					3					3		3		3		
	CO2					3							3		3		
	CO3					3					3		3		3		
	CO4					3							3		3		
	CO5					3							3		3		

HISTORY OF ARCHITECTURE - III

Contact Hours/Week	:	03	Credits	:	3
Total Lecture Hours	:	45	CIE Marks	:	50
Total Tutorial Hours	:	--	SEE Marks	:	50
Course Code	:	3ATT01	Exam Mode	:	Theory

Course objectives: This course will enable students to:	
1.	Recognise the architectural characteristics in Islamic and Colonial periods in India.
2.	Familiarize with the evolution of various phases of Islamic Architecture in India.
3.	Analyse the influence of vernacular elements, technology, and planning in Islamic Building Typologies.
4.	Familiarize with the influence of Colonial period in India.

UNIT I
Coming of Islam to India in 11th century A.D. Distinctive features of each of the dynasties. Development of basic mosque and tomb prototypes. Imperial style - Delhi: Slave and Khilji phase: Quwwat-ul-Islam, Qtub complex, Tomb of Iltumish, Alai Darwaza. Tughlaq dynasty: Tomb of Ghiyasuddin Tughlaq, Khirki masjid, Sayyid and Lodhis dynasties: One example of Octoganal and square tombs.
9 Hours

UNIT II
Development of Provincial styles and their distinctive features.Jaunpur - Eg: Atala Masjid and Jami Masjid. Bengal style - Eg: Eklakhi tomb, Chota sona and Bada sona Masjid Ahmedabad - Integration of Hindu and Muslim style in building features - exclusive features. Eg: Jami masjid at Ahmedabad and Wavs of Gujarat, Recreational complex at Sarkhej.
9 Hours

UNIT III
Bijapur, Gulbarga and Bidar - variations in design approach between Bijapur, Gulbarga and Bidar in planning and features - forms and finishes. Bijapur: Eg: GolGumbaz, Ibrahim Rauza and Jami masjid. Gulbarga: Jami Masjid Bidar: Madrasa of Md. Gawan at Bidar. Mughal Phase: Fort and complexes of Mughal architecture during Akbar, Jehangir and Shahjehan: Eg: Agra Fort, Fathepur Sikri fort and Red fort, Shahajanabad
9 Hours

UNIT IV
Mughal phase - Development under Humayun, Akbar, Jehangir and Shahjehan as well as Aurangazeb. Exclusive features and typology of Mughal tombs and complex structural systems and their use. Eg: Humayun's tomb, Tomb of Salim Chisti, Akbar's tomb, Tomb of Mariam-uz-Zamani, Taj mahal, Tomb of Itmad ud Daulah at Agra and Bibi-ka-Maqbarah at Aurangabad.
9 Hours

UNIT V
Colonial Phase –Arrival of British - Initial phase. Forts of Bombay, Madras and Kolkata. Later phase: Eg: Campuses, railway stations, public buildings etc. - St. Paul's Cathedral, Bombay Town hall, Victoria terminus, Club at Madras etc. Final/last phase: Design and layout of New Delhi and its buildings. Eg: Rashtrapathi Bhavan, Parliament.
9 Hours

Note
a. Assignments to include study of concepts relating to cultural and religious beliefs and structure. b. Models, sketches and analytical studies can be carried out individually or in groups.

REFERENCE BOOKS		
1	Kenneth Frampton	"Modern Architecture- A Critical History" Thames and Hudson Aug 2007, ISBN-13 : 978-0500203958
2	Tadgel, Christopher	"History of Architecture in India" Phaidon Press, July 1994, ISBN : 9780714829609, 0714829609
3	Brown, Percy	"Indian Architecture - Islamic period" ISBN: 9781446513118, 1446513114
4	Grover Satish	The architecture of India: Islamic (727-1707 A.D.) Vikas Publishing House, 1981, 070691130X, 9780706911305

Course Outcomes: Upon completion of this course the student will be able to:	
CO1	Identify the design elements of mosques and tombs in the early Islamic period of India.
CO2	Summarize the influence of vernacular architecture on the construction techniques of mosques in Gujarat and Bengal provinces.
CO3	Appraise the provincial Islamic Architecture of Karnataka and the establishment of Mughal empire at Delhi.
CO4	Relate the technological advancement and grandeur of Mughal buildings with that of the earlier phases for their perfection in planning and aesthetics.
CO5	Categorize the public building typologies constructed during the British colonial phase of India.

Course Articulation Matrix

		POs												**PSOs**			
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
COs	**CO1**	3											3			3	
	CO2	3														3	
	CO3	3														3	
	CO4	3														3	
	CO5	3														3	

BUILDING SERVICES - I
(Water Supply and Sanitation)

Contact Hours/Week	:	03	Credits	:	3
Total Lecture Hours	:	42	CIE Marks	:	50
Total Tutorial Hours	:	--	SEE Marks	:	50
Course Code	:	3ATT02	Exam Mode	:	Theory

Course objectives: This course will enable students to:	
1.	Get introduced to the sources of water supply and its treatment processes.
2.	Familiarize with the systems and methods of water distribution.
3.	Identify various types of materials, and construction techniques used in sewerage system.
4.	Get introduced to rainwater harvesting systems at various scales.
5.	Familiarize with the concept of Solid waste management and special requirements of buildings.

UNIT I
Introduction to Environment and Health Aspects: History of Sanitation with respect to human civilization, Importance of Health, Hygiene Cleanliness, Waterborne, Water related, Water based, Epidemic diseases, Urban and Rural Sanitation. Water Supply: Sources of Water supply – Municipal, bore well, river, etc. Quantity of water for different usages like Domestic, Hot water, Flushing, Gardening, Commercial, Industrial. Quality of supply for different uses as per national and international standards.Water treatment: Objectives of treatment, process- coagulation/flocculation, sedimentation, filtration (slow sand and rapid sand), disinfection, chlorination, softening
8 Hours

UNIT II
Water distribution system - Requirement of a good distribution system. Methods of distribution systems- gravity system, pumping and combined system. Layouts of distribution system-dead end, grid-iron, ring and radial systems. Calculate the underground water tank storage capacity for a building. Water distribution in low and high rise building – Direct, over-head tank, underground to overhead tank, hydro-pneumatic and other systems. Distribution of water to fixture and fittings, schematic diagrams, high rise building, Swimming pool, water bodies, efficient usage of water.
8 Hours

UNIT III
Plumbing: Water supply piping – hot, cold, flushing water, Piping in sunken areas, false ceiling areas, Drainage – floor traps, drains, P-trap, bottle traps, Single stack, two stack, cross venting, fixture venting, Material of construction like GI, PPR, PB, CPVC, Composite pipes, Copper, Flow control Valves – Gate valve, Globe valves, butterfly valves, Pressure Reducing valves &station, Pipe supports, hangers, fixing, plumbing of small residence. Materials used to fight fire and Fire hydrants. Sanitary Fixtures, Fittings & Wellness: Soil appliances – Water closets, Bidet, urinals, Cisterns, Flush valve, Waste appliances – wash basin, sink, dishwasher, washing machine, Hot water system – Geysers, boilers, heat pump, Bath & water fixtures – Taps, mixers, single lever, quarter turn, bathtub, multi-jet bath, rain showers, health faucets, Wellness products : Sauna bath, steam bath, Jacuzzi.
9 Hours

UNIT IV
Sewerage system: Assessment of sewage generated, Collection of sewage / wastewater from all sources, Conveyance of sewage – gully trap, chamber, manhole, intercepting trap, grease traps, backflow preventer, schematic diagram. Materials of construction of sewerage network – PVC, UPVC, HDPE, corrugated PP pipes, objectives of Sewage treatment, types of treatment, aerobic, anaerobic and Space requirements. Storm water Management: Assessment, Drainage system – piped drains, open drains, Recharging of storm water, Drainage of basements, paved areas, Collection, Reuse of water within the project, reduction of the load on municipal system, landscape drainages and Rainwater harvesting.
9 Hours

UNIT V
Solid Waste Management: Assessment of waste, Waste to wealth concept, Municipal waste, garden waste, organic & inorganic, Commercial waste, Medical waste & Industrial waste, Collection, segregation, treatment, disposal, Organic waste – Bio-methanation, Vermi-composting, Organic waste converter. Special requirements: Solar Hot Water Generation, Fire water storage requirements, Central LPG Supply System, Medical Gases Supply, Waste Collection and Storage
8 Hours

TEXT BOOKS		
1	RS Deshpande	A Text Book of Sanitary Engineering, Vol:1, United Books, Pune, 1959.

REFERENCE BOOKS		
1	Birdie, G. S. and Birdie J. S	"Water Supply and Sanitary Engineering", Dhanpat Rai Publications, 2010

Course Outcomes: Upon completion of this course the student will be able to:	
CO1	Identify the sources of water supply, their requirements with quality and quantity as per standards.
CO2	Identify different water distribution systems and calculate the quantity of water required for a building.
CO3	Develop plumbing layout for a small building using various material and Fixture
CO4	Summarize the sewage and storm water management systems.
CO5	Explore types and collection methods of solid waste and its treatment methods.

Course Articulation Matrix

		POs												PSOs			
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
COs	**CO1**	3													3		
	CO2	3													3		
	CO3	3		3									3		3		
	CO4	3						3							3		
	CO5	3						3							3		

CLIMATOLOGY

Contact Hours/Week	:	03	Credits	:	3
Total Lecture Hours	:	42	CIE Marks	:	50
Total Tutorial Hours	:	--	SEE Marks	:	50
Course Code	:	3ATT03	Exam Mode	:	Theory

Course objectives:	
This course will enable students to:	
1.	Introduce the principles of climate, climatic zones, climatic data and their relationship with the built environment.
2.	Develop understanding of solar geometry, thermal performance, wind movement, natural ventilation and daylighting as determinants of architectural design.
3.	Enable application of climate-responsive and passive design strategies in site planning, building design and selection of appropriate materials and building systems.

UNIT I

Climate and Climate Analysis

Introduction to Climate: Weather and climate; elements of climate—solar radiation, temperature, humidity, wind, rainfall and cloud cover; climatic data and instruments.

Climate Classification: Global climatic zones; tropical climates; major climatic zones of India—hot-dry, warm-humid, composite, temperate and cold; climatic characteristics and architectural implications.

Climatic Data Analysis: Representation and interpretation of temperature, humidity, rainfall, solar radiation and wind data; climatic charts and wind roses; seasonal variations; overheated and underheated periods.

Site and Microclimate: Macroclimate, mesoclimate and microclimate; effects of topography, vegetation, water bodies, built form and urbanisation; urban heat island effect.

Climate Change: Climate change and its impact on buildings; extreme weather events; climate adaptation and mitigation in architecture.

8 Hours

UNIT II

Solar Geometry and Building Orientation

Solar Geometry: Earth–sun relationship; solar altitude, azimuth and declination; solar radiation—direct, diffuse and reflected; solar angles.

Sun-Path Diagrams: Preparation and interpretation of sun-path diagrams; solar charts; shadow angles and their application in architectural design.

Building Orientation: Principles of solar orientation; relationship between orientation, building form and solar exposure; orientation strategies for different climatic zones.

Shading and Solar Control: Horizontal, vertical and combined shading devices; fixed and adjustable shading; shading design for different orientations; vegetation and landscape as solar control.

Solar Heat Gain: Heat gain through walls, roofs and glazing; effect of window orientation and glazing; solar control glass and shading strategies.

8 Hours

UNIT III

Thermal Environment and Building Envelope

Thermal Environment: Basic thermal comfort; thermal balance; environmental and personal factors; psychrometric and bioclimatic charts; adaptive comfort and Indian Model of Adaptive Comfort.

Heat Transfer: Conduction, convection and radiation; thermal conductivity, resistivity,

diffusivity, thermal capacity and emissivity; U-value, thermal resistance and time lag.
Thermal Performance of Building Elements: Thermal behaviour of walls, roofs, floors and glazing; sol-air temperature; solar heat gain; thermal bridging.
Building Envelope: Insulation; cavity construction; thermal mass; reflective and cool roofs; appropriate glazing; double-skin envelopes; climate-responsive materials and surface finishes.

9 Hours

UNIT IV

Wind, Natural Ventilation and Daylighting

Wind and Air Movement: Wind characteristics; wind roses; pressure differences; windward and leeward conditions; air movement around buildings; effects of surrounding buildings and vegetation.
Natural Ventilation: Cross, single-sided and stack ventilation; wind- and buoyancy-driven ventilation; openings and ventilation paths; courtyards, atria and wind towers.
Building Form and Air Movement: Orientation, building form and spacing; wind shadows; site planning for natural ventilation.
Daylighting: Characteristics of daylight; direct and diffuse light; reflection, transmission and diffusion; daylight factor; glare and visual comfort.
Daylighting Strategies: Window design; clerestories, skylights, light shelves, atria and courtyards; north lighting; shading and daylight integration.

9 Hours

UNIT V

Climate-Responsive Architecture and Passive Design

Climate-Responsive Design: Design principles for hot-dry, warm-humid, composite, temperate and cold climates; relationship between climate, site, orientation, form, envelope, openings and landscape.
Passive Design Strategies: Passive heating and cooling; thermal mass; insulation; shading; natural ventilation; evaporative and radiant cooling; earth-air tunnels; wind towers; solar chimneys; roof ponds and courtyards.
Site and Landscape: Climatic site planning; vegetation and water bodies; shaded spaces; building spacing; surface treatments and microclimate modification.
Vernacular Responses: Traditional climate-responsive buildings; regional materials, construction techniques, courtyards, shading, ventilation and thermal mass; selected local case studies.
Integrated Climate-Responsive Design: Application of climatic analysis to architectural design; integration of solar, wind, daylight, thermal performance, landscape and passive strategies; climate adaptation and low-energy design.

8 Hours

REFERENCE BOOKS

1	Koenigsberger, Otto	Manual of Tropical Housing & Buildings (Part-II), Orient Longman Private Limited, Bombay, 1996, ISBN: 9788125011071, 8125011072
2	Arvind Krishan, Baker &Szokolay	Climate Responsive Architecture, Tata McGraw-Hill Publishing Company, 2002. ISBN: 9780074632185, 0074632183
3	Martin Evans	Housing, Climate, and Comfort; Architectural Press , 2007, ISBN: 9780470268841, 0470268840
4	Donald Watson and Kenneth Labs	Climatic Building Design - Energy-Efficient Building Principles and Practice; McGraw-Hill Book Company, 2007. ISBN: 9780070684782, 0070684782

5	Mili Majumdar (Editor);	Energy Efficient Buildings in India; The Energy and Resources Institute, TERI 2009. ISBN: 9788185419824, 8185419825
6	Baruch Givoni	Passive and Low Energy Cooling of Buildings; John Wiley & Sons, 1994. ISBN: 9780471284734, 0471284734
7	Bureau of Energy Efficiency, Ministry of Power, Government of India.	Energy Conservation Building Code (ECBC) 2007; Bureau of Energy Efficiency, 2011

Course Outcomes: Upon completion of this course the student will be able to:	
CO1	Examine climatic elements, climatic zones and climatic data to assess their implications for architectural design.
CO2	Apply principles of solar geometry, solar radiation, building orientation and shading to develop climate-responsive design strategies.
CO3	Analyse the thermal performance of building materials and envelopes and apply appropriate strategies for thermal comfort and energy efficiency.
CO4	Apply principles of wind movement, natural ventilation and daylighting in building and site planning.
CO5	Integrate climatic analysis, passive design strategies, site planning, building form and vernacular principles to develop climate-responsive architectural solutions.

Course Articulation Matrix

		POs												**PSOs**			
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
COs	**CO1**	3	1					1					3		3		
	CO2	3		1	1			1							3		
	CO3	3			2			1					3		3		
	CO4	3			2			1							3		
	CO5	3		1	2			1					3		3		

BUILDING STRUCTURES - II

Contact Hours/Week	:	03	Credits	:	3
Total Lecture Hours	:	45	CIE Marks	:	50
Total Practical Hours	:	--	SEE Marks	:	50
Course Code	:	3ATT04	Exam mode	:	Theory

Course objectives:	
This course will enable students to:	
1.	Understand basic structural behaviour of building elements.
2.	Identify tension, compression, bending and shear in buildings.
3.	Understand material behaviour of concrete, steel, timber and masonry.
4.	Relate beams, columns, slabs, walls and cantilevers to architectural planning.
5.	Apply simple structural calculations for understanding building behaviour.

UNIT I

Simple Stress, Strain and Structural Action

- Concept of stress, strain and deformation
- Elasticity, ductility, brittleness and Hooke's law
- Tension and compression in building members
- Deformation in beams, columns, slabs and tie members
- Factor of safety — basic concept
- Structural action in real building elements:
  tie rods in roofs, columns in compression, beams in bending, slabs in flexure, walls under compression

Numerical problems:

- Calculation of stress in a column or tie member
- Calculation of strain due to axial load
- Simple elongation or shortening of a uniform bar
- Factor of safety from ultimate stress and working stress

9 Hours

UNIT II

Elastic Properties and Material Behaviour

- Young's modulus and Poisson's ratio - conceptual understanding
- Stiffness and flexibility of structural members
- Temperature effects in buildings
- Expansion, contraction and thermal movement joints
- Material behaviour of concrete, steel, timber and masonry
- Shrinkage, creep and cracking in buildings
- Structural implications of material choice in architecture

Numerical problems:

- Calculation of Young's modulus from stress and strain
- Calculation of lateral strain using Poisson's ratio
- Simple thermal expansion of a beam/slab/rail-like member
- Comparison of deformation in concrete, steel and timber members under similar loading

9 Hours

UNIT III

Columns, Buckling and Stability in Buildings

- Columns and struts

- Short column and long column
- Slenderness ratio — basic concept
- Buckling behaviour of columns
- Effective length — conceptual understanding
- Stability of compression members
- Columns in architectural planning
- Column spacing and structural grids
- Slender columns in atriums, canopies and high-rise buildings
- Effect of bracing, shear walls and core walls on stability
- Architectural implications of column placement

Numerical problems:

- Calculation of slenderness ratio
- Identification of short and long columns
- Simple effective length calculation for different end conditions
- Basic safe load calculation using given critical load and factor of safety
- Conceptual comparison of braced and unbraced columns

9 Hours

UNIT IV

Loads, Supports, Shear Force and Bending Moment

- Types of loads on buildings
- Supports and reactions — basic concept
- Simply supported, cantilever and overhanging beams
- Qualitative understanding of shear force and bending moment
- Visual interpretation of SFD and BMD
- Beam behaviour in balconies, lintels, canopies, floor beams and roof beams
- Relation between span, beam depth and deflection
- Cantilevers in architecture
- Transfer girders and transfer beams — introductory concept

Numerical problems:

- Support reactions for simply supported beam with point load
- Support reactions for simply supported beam with UDL
- Maximum bending moment in simply supported beam
- Shear force and bending moment values at key points
- Simple cantilever beam with point load or UDL
- Sketching basic SFD and BMD for simple cases

9 Hours

UNIT V

Bending Stress, Shear Stress and Beam Forms

- Concept of bending stress in beams
- Concept of shear stress in beams
- Neutral axis — basic understanding
- Section modulus — conceptual meaning
- Stress distribution in beam sections
- Beam section forms: rectangular beams, T-beams, I-sections, box sections, hollow sections, RC beams and steel girders
- Relationship between beam shape and structural efficiency
- Visible structure vs hidden structure in architecture
- Integration of beam depth with ceiling, services and HVAC ducts
- Architectural expression of beams and structural systems

Numerical problems:

- Calculation of bending stress using given moment and section modulus
- Calculation of section modulus for simple rectangular section
- Identification of neutral axis in symmetrical beam sections
- Simple shear stress calculation for rectangular beam section
- Comparison of rectangular and I-section beams conceptually for efficiency

9 Hours

REFERENCE BOOKS		
1	Bureau of Indian Standards (BIS)	IS 456-2000 Plain and Reinforced Concrete - Code of Practice, 4th Revision, 10th reprint, 2007.
2	Bureau of Indian Standards (BIS)	IS SP-16 (1980): Design Aids for Reinforced Concrete to IS 456:1978 [CED 2: Cement and Concrete], 11th Reprint, March 1999.
3	Martin Bechthold and Daniel L Schodek	STRUCTURES, Pearson Education, New Delhi. 7th Edition, 2014, ISBN (13): 978-0-13-255913-3, ISBN (10):0-13-255913-3
4	Robers A Heller and Deborah J Oakley	Salvadori's Structure in Architecture - Pearson Education, New Delhi. 4th Edition, 2017, ISBN (13): 978-0-13-280320-5, ISBN (10):0-13-280320-8
5	Francis D.K. Ching and Barry Onouye	Building Structures Illustrated: Patterns, Systems and Design John Wiley & Sons, 2nd Edition, 2014. ISBN: 978-1118458358 / 1118458359
6	Angus J. Macdonald	Structure and Architecture Routledge, 3rd Edition, 2018. ISBN: 978-1138658677 / 1138658678

Course Outcomes:
Upon completion of this course the student will be able to:

CO1	Explain stress, strain, deformation, tension and compression in building elements.
CO2	Interpret material behaviour, stiffness, flexibility, thermal movement, shrinkage and cracking in buildings.
CO3	Explain column behaviour, buckling, slenderness and stability in architectural planning.
CO4	Analyse simple loads, supports, shear force and bending moment in beams and building components.
CO5	Relate bending stress, shear stress and beam sections to structural efficiency, architectural form and service integration.

Course Articulation Matrix

		POs												**PSOs**			
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
COs	**CO1**	3													3		
	CO2	3													3		
	CO3	3													3		
	CO4	3													3		
	CO5	3													3		

PROFESSIONAL ELECTIVE – I

ARCHITECTURAL PHOTOGRAPHY

Contact Hours/Week	:	02	Credits	:	2
Total Lecture Hours	:	-	CIE Marks	:	50
Total Studio Hours	:	28	SEE Marks	:	50
Course Code	:	ATPE01	Exam Mode	:	Viva

Course objectives:	
This course will enable students to:	
1.	Introduce the principles, equipment and technical fundamentals of architectural photography.
2.	Develop skills in composition, perspective, lighting and camera techniques for documenting architectural spaces and buildings.
3.	Enable students to produce, edit and present effective architectural photographs for documentation, analysis and professional communication.

UNIT I

Fundamentals of Architectural Photography

Introduction to Architectural Photography: Role and applications of photography in architecture; documentation, analysis, presentation and visual communication; types of architectural photography—exterior, interior, detail, contextual and urban photography.

Camera and Equipment: SLR, DSLR and mirrorless cameras; camera controls and handling; lenses and focal lengths; wide-angle, normal, telephoto, zoom and macro lenses; tripods and essential accessories.

Exposure and Camera Settings: Aperture, shutter speed and ISO; exposure triangle; depth of field; motion and exposure control; white balance; image formats and resolution.

6 Hours

UNIT II

Composition and Architectural Visualisation

Composition: Principles of visual composition; framing, balance, symmetry, rhythm, scale, proportion, leading lines and focal points; foreground, middle ground and background; silhouette and abstract photography.

Perspective and Viewpoint: Camera position and height; perspective and distortion; converging verticals; methods of controlling perspective; selection of appropriate focal length and viewpoint.

Architectural Context: Relationship between building and surroundings; human scale; landscape, vegetation, sky and contextual elements; seasonal variations; streetscape and urban photography.

6 Hours

UNIT III

Lighting and Architectural Photography

Natural Light: Direction, intensity, colour and quality of light; sunlight and shadow; diffused and reflected light; golden hour, blue hour, twilight and night photography.

Interior Lighting: Daylight and artificial light; mixed lighting conditions; exposure for interiors; windows, reflections and contrast; balancing interior and exterior exposure.

Creative Use of Light: Light and shadow as compositional elements; silhouettes; highlights and reflections; dramatic and atmospheric architectural images; basic use of artificial lighting.

6 Hours

UNIT IV
Architectural Documentation **Exterior Photography:** Selection of viewpoint; building elevations, perspectives and contextual views; recording materials, façade details and landscape; documentation of completed buildings and heritage structures. **Interior Photography:** Spatial composition; capturing scale and depth; furniture, finishes and details; lighting and exposure challenges; documentation of interior spaces. **Architectural Details and Models:** Close-up and macro photography; materials, textures, construction details and architectural elements; photographing drawings, models and physical study models. **Documentation Workflow:** Site photography planning; shot lists; file organisation, metadata and image storage; ethical considerations in architectural documentation.
5 Hours

UNIT V
Digital Processing and Presentation **Digital Image Processing:** Image selection and organisation; cropping, exposure, contrast, colour and tonal adjustments; perspective correction; lens correction; noise reduction and sharpening. **Architectural Image Enhancement:** HDR and exposure blending; panoramic images; removal of minor distractions; basic image compositing; creative photo-rendering techniques while maintaining architectural accuracy. **Presentation and Applications:** Preparation of photographic documentation for portfolios, architectural presentations, competitions, publications, lectures and digital platforms; sequencing and layout of photographic narratives. **Practical Exercise:** Documentation and presentation of a selected building through a curated photographic series incorporating exterior, interior, detail, contextual, daylight and night photographs.
5 Hours

REFERENCE BOOKS		
1	Adrian Schulz	Architectural Photography: Composition, Capture, and Digital Image Processing, 3rd Edition, Rocky Nook, 2015. ISBN: 978-1-937538-76-7.
2	Michael Heinrich	Basics Architectural Photography, Birkhäuser, 2008. ISBN: 978-3-7643-8666-5.
3	John Siskin	Photographing Architecture: Lighting, Composition, Postproduction, and Marketing Techniques, Amherst Media, 2012. ISBN: 978-1-60895-300-4.
4	Steven Brooke	Architectural Photography and Composition: A Complete Guide to the History, Practice and Techniques of Depicting Architecture, Interiors and Landscape and the Applications for Digital Photography, Steven Brooke Studios, 2020.
5	Tom Ang	Photography: The Definitive Visual History, Penguin, 2022. ISBN: 978-0-7440-7792-6.

Course Outcomes: Upon completion of this course the student will be able to:	
CO1	Identify and operate appropriate cameras, lenses and photographic equipment for architectural documentation.
CO2	Apply principles of exposure, composition, perspective and viewpoint to produce effective architectural photographs.

CO3	Apply natural and artificial lighting techniques to document architectural spaces, forms, materials and details.
CO4	Produce systematic photographic documentation of buildings, interiors, architectural details and contextual environments.
CO5	Edit, organise and present architectural photographs using digital workflows for professional portfolios, presentations, competitions and publications.

Course Articulation Matrix

		POs												PSOs			
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
COs	**CO1**	3											3	3			
	CO2	3				1							3	3			
	CO3	3				1							3	3			
	CO4	3				1							3	3			
	CO5	3				1							3				3

VISUAL COMMUNICATION

Contact Hours/Week	:	02	Credits	:	2
Total Lecture Hours	:	-	CIE Marks	:	50
Total Studio Hours	:	28	SEE Marks	:	50
Course Code	:	ATPE02	Exam Mode	:	Viva

Course objectives: This course will enable students to:	
1.	Introduce the principles, elements and processes of visual communication across print, digital, advertising, art and architectural media.
2.	Develop an understanding of visual language, composition, symbolism, typography and the relationship between text and images.
3.	Enable students to apply visual communication principles to develop effective graphic, symbolic and architectural communication.

UNIT I

Fundamentals of Visual Communication

Introduction to Visual Communication: Meaning, nature and scope of visual communication; role of visual communication in everyday life, print media, electronic media, advertising, art and architecture; visual perception and interpretation.

Elements of Visual Language: Point, line, shape, form, colour, texture, space, scale, proportion, balance, contrast, rhythm and hierarchy; principles of visual composition.

Visual Perception: Figure-ground relationship; Gestalt principles; visual emphasis; grouping, continuity, closure and visual hierarchy.

6 Hours

UNIT II

Visual Language and Meaning

Visual Devices: Space, context, scale, association, transformation, cropping, framing, distortion, abstraction, fragmentation, exaggeration, juxtaposition and subversion.

Meaning and Representation: Denotation and connotation; signs and symbols; visual metaphors; narrative and conceptual representation; cultural influences on visual meaning.

Pictograms and Ideograms: Principles of symbolic communication; development and application of pictograms, ideograms and visual signs; universal and culturally specific symbols.

6 Hours

UNIT III

Graphic Communication and Identity

Typography: Introduction to typography; typefaces and classifications; font selection; hierarchy, alignment, spacing and readability; relationship between typography and imagery.

Text and Image: Integration of text and images; visual hierarchy; composition of information; grids and layout systems; captions, titles and annotations.

Symbols and Identity: Logo, symbol, mark and icon; differences and applications; principles of visual identity; process of developing a logo from concept to final graphic.

6 Hours

UNIT IV

Visual Communication in Art and Architecture

Architectural Representation: Role of visual communication in architectural drawings, diagrams, presentations and publications; plans, sections, elevations, perspectives and

analytical diagrams as communication tools.

Information and Diagramming: Conceptual diagrams; analytical diagrams; process diagrams; maps, charts, timelines and infographics; sequencing and visual storytelling.

Media and Techniques: Hand-drawn and digital communication; collage, photography, illustration and digital graphics; selection of appropriate media according to purpose and audience.

5 Hours

UNIT V

Visual Communication Design and Application

Composition and Information Hierarchy: Organisation of visual content; hierarchy, emphasis and sequencing; balancing text, images and graphics; clarity and readability.

Cultural and Aesthetic Context: Cultural influences on visual interpretation; symbolism and identity; aesthetics and visual preferences; ethical considerations in visual communication.

Visual Communication Project: Concept development, research, ideation, experimentation and refinement; development of a visual communication system for an architectural, cultural, social or commercial context; presentation and critique of the final outcome.

5 Hours

REFERENCE BOOKS

1	Donis A. Dondis	A Primer of Visual Literacy, MIT Press, 1973. ISBN: 978-0262540292.
2	Rudolf Arnheim	Art and Visual Perception: A Psychology of the Creative Eye, University of California Press, 1974. ISBN: 978-0520243835.
3	David Dabner	Sandra Stewart and Abbie Vickress, Graphic Design School: The Principles and Practice of Graphic Design, 7th Edition, Wiley, 2020. ISBN: 978-1119647271.
4	Ellen Lupton	Thinking with Type: A Critical Guide for Designers, Writers, Editors, and Students, 3rd Edition, Princeton Architectural Press, 2024. ISBN: 978-1797229268.
5	Robin Landa	Graphic Design Solutions, 6th Edition, Cengage Learning, 2023. ISBN: 978-0357635207.
6	Paul Rand	Thoughts on Design, Chronicle Books, 2014. ISBN: 978-1616894866
7	Bruno Munari	Design as Art, Penguin Books, 2008. ISBN: 978-0141035819

Course Outcomes:

Upon completion of this course the student will be able to:

CO1	Identify and apply the elements and principles of visual communication to organise visual information effectively.
CO2	Apply visual language, signs, symbols and graphic devices to communicate concepts and meanings.
CO3	Develop appropriate combinations of typography, imagery, symbols and layout to create coherent visual compositions.
CO4	Apply visual communication techniques to architectural drawings, diagrams, presentations and other media.
CO5	Develop and present a visual communication project considering purpose, audience, cultural context, aesthetics and clarity of communication.

Course Articulation Matrix

		POs												PSOs			
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
COs	**CO1**	3											3	3			
	CO2	3				1							3	3			
	CO3	3				1							3	3			
	CO4	3				1							3	3			3
	CO5	3				1							3	3			3

VERNACULAR ARCHITECTURE

Contact Hours/Week	:	02	Credits	:	2
Total Lecture Hours	:	-	CIE Marks	:	50
Total Studio Hours	:	28	SEE Marks	:	50
Course Code	:	ATPE03	Exam Mode	:	Viva

Course objectives: This course will enable students to:	
1.	Introduce the principles, characteristics and regional diversity of vernacular architecture in relation to culture, society, climate and place.
2.	Develop skills in observing, documenting, analysing and representing vernacular buildings, materials and construction techniques.
3.	Enable students to critically assess the relevance and adaptation of vernacular knowledge for contemporary, sustainable and context-responsive architecture.

UNIT I

Introduction to Vernacular Architecture

Concept and Approaches: Meaning, scope and characteristics of vernacular architecture; vernacular, indigenous, traditional and regional architecture; approaches to the study of vernacular architecture; relationship between people, place and built environment.

Regional Diversity: Overview of vernacular architecture across major geographical regions of India; settlement patterns, building forms, spatial organisation and regional variations.

Determinants of Vernacular Architecture: Geography, climate, culture, society, economy, religion, traditions, available materials, local skills and technology as determinants of architectural character.

6 Hours

UNIT II

Form, Space, Culture and Materials

Settlement and Building Patterns: Traditional settlement morphology; relationship between house, street, community and landscape; courtyard and cluster planning; public, semi-public and private spaces.

Architectural Character: Building form, proportion, scale, colour, ornamentation, symbolism, art and craft; cultural practices and their influence on spatial organisation.

Materials and Construction: Local and indigenous materials; earth, mud, stone, brick, timber, bamboo, thatch, lime and natural fibres; traditional construction techniques; craftsmanship and local knowledge.

6 Hours

UNIT III

Climate and Environmental Responsiveness

Climate-Responsive Vernacular Architecture: Relationship between climate and building form; orientation, compactness, courtyards, shading, thermal mass, insulation and natural ventilation.

Traditional Environmental Strategies: Passive heating and cooling; daylighting; rainwater management; landscape and vegetation; water bodies; locally appropriate construction techniques.

Materials and Climate: Thermal and environmental characteristics of vernacular materials; embodied energy; resource efficiency; durability and adaptability; case studies of vernacular materials responding to climatic challenges.

6 Hours

UNIT IV
Documentation and Analysis **Methods of Documentation:** Observation, measured drawing, photography, sketches, interviews, mapping and archival research; ethical approaches to documenting traditional communities and knowledge. **Recording and Representation:** Site and settlement documentation; plans, sections, elevations, details and diagrams; material and construction documentation; measurement accuracy, data organisation and graphical representation. **Documentation Study:** Field documentation of a selected vernacular building or settlement; analysis of spatial organisation, materials, construction, cultural practices and environmental responses; preparation of a documented case study.
5 Hours

UNIT V
Vernacular Knowledge in Contemporary Architecture **Continuity and Transformation:** Changing lifestyles, technology, materials and aspirations; challenges to vernacular traditions; adaptation, continuity and transformation of traditional practices. **Vernacular and Contemporary Practice:** Architects and contemporary practices that reinterpret vernacular principles; critical study of tradition, innovation, regional identity and contemporary needs. **Vernacular Materials for Contemporary Applications:** Evolution and adaptation of traditional materials; mapping local and vernacular materials; application in affordable housing and informal settlements; resource-efficient and context-responsive construction. **Integrated Study:** Critical evaluation of selected contemporary projects derived from vernacular principles; development of design principles or strategies applicable to contemporary architecture.
5 Hours

REFERENCE BOOKS		
1	Paul Oliver	Dwellings: The House Across the World, Phaidon Press, 2003. ISBN: 978-0714840976.
2	Amos Rapoport	House Form and Culture, Prentice-Hall, 1969. ISBN: 978-0133956733.
3	R. W. Brunskill	Illustrated Handbook of Vernacular Architecture, Faber & Faber, 2000. ISBN: 978-0571203392.
4	Oliver, Paul (Ed.)	Encyclopedia of Vernacular Architecture of the World, Cambridge University Press, 1997. ISBN: 978-0521564220.
5	Kenneth Frampton	Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth Century Architecture, MIT Press, 1995. ISBN: 978-0262561495.
6	Balkrishna V. Doshi	Paths Uncharted, Roli Books, 2011. ISBN: 978-8174368436.
7	Noble, Allen G	Traditional Buildings: A Global Survey of Structural Forms and Cultural Functions, I.B. Tauris, 2007. ISBN: 978-1845113057

Course Outcomes: Upon completion of this course the student will be able to:	
CO1	Identify the characteristics and regional variations of vernacular architecture and relate them to geographical, climatic, social and cultural factors.

CO2	Analyze traditional building forms, spatial organization, materials and construction techniques in their cultural and environmental contexts.
CO3	Evaluate vernacular strategies for climate responsiveness, resource efficiency and environmental adaptation.
CO4	Document and represent selected vernacular buildings or settlements through measured drawings, photographs, sketches, mapping and analytical studies.
CO5	Apply relevant vernacular principles, materials and knowledge to develop context-responsive and sustainable contemporary architectural strategies**.**

Course Articulation Matrix

		POs												**PSOs**			
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
COs	**CO1**	3											3	3			
	CO2	3			2								3	3			
	CO3	3			2								3	3			
	CO4	3											3	3			
	CO5	3											3	3			

SOCIAL CONNECT & RESPONSIBILITIES

Contact Hours/Week	:	02	Credits	:	1
Total Lecture Hours	:	-	CIE Marks	:	100
Total Practical Hours	:	30	SEE Marks	:	-
Course Code	:	SHS01-AT	Exam Mode	:	-

Course objectives:	
This course will enable students to:	
1.	Enable the student to do a deep drive into societal challenges being addressed by NGO(s), social enterprises & the government and build solutions to alleviate these complex social problems through immersion, design & technology.
2.	Provide a formal platform for students to communicate and connect to their surroundings.
3.	Enable to create of a responsible connection with society.

UNIT I
Plantation and adoption of a tree: Plantation of a tree that will be adopted for four years by a group of B.Tech/ B Arch. students. They will also make an excerpt either as a documentary or a photo blog describing the plant's origin, its usage in daily life, and its appearance in folklore and literature.
3 Hours

UNIT II
Heritage walk and crafts corner: Heritage tour, knowing the history and culture of the city, connecting to people around through their history, knowing the city and its craftsman, photo blog and documentary on evolution and practice of various craft forms.
3 Hours

UNIT III
Organic farming and waste management: usefulness of organic farming, wet waste management in neighbouring villages, and implementation in the campus.
3 Hours

UNIT IV
Water Conservation: knowing the present practices in the surrounding villages and implementation in the campus, documentary or photo blog presenting the current practices.
3 Hours

UNIT V
Food Walk City's culinary practices, food lore, and indigenous materials of the region.
3 Hours

Note
The pedagogy will include interactive lectures, inspiring guest talks, field visits, social immersion, and a course project. Applying and synthesizing information from these sources to define the social problem to address and take up the solution as the course project, with your group. Social immersion with NGOs/social sections will be a key part of the course.

Course Outcomes:
Upon completion of this course the student will be able to:

CO1	Understand social responsibility.
CO2	Practice sustainability and creativity.
CO3	Showcase planning and organizational skills.

Course Articulation Matrix

		POs												PSOs			
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
COs	**CO1**	3	2											2			
	CO2	3												2			
	CO3	3	2											2			

NSS, SPORTS, YOGA AND PRANAYAMA, MUSIC

Contact Hours/Week	:	02	Credits	:	Audit
Total Lecture Hours	:	-	CIE Marks	:	--
Total Practical Hours	:	30	SEE Marks	:	--
Course Code	:	PMC1	Exam Mode	:	--
		PMC2			
		PMC3			
		PMC4			

SIDDAGANGA INSTITUTE OF TECHNOLOGY
Tumakuru-572103

(An Autonomous Constituent Institution of Visvesvaraya Technological University, Belagavi)

SCHOOL OF ARCHITECTURE

DETAILED SYLLABUS FOR
FOURTH SEMESTER
B. ARCHITECTURE

ARCHITECTURAL DESIGN - III

Contact Hours/Week	:	08	Credits	:	8
Total Lecture Hours	:	-	CIE Marks	:	50
Total Studio Hours	:	120	SEE Marks	:	50
Course Code	:	4ATS01	Exam Mode	:	Viva

Course objectives: This course will enable students to:	
1	Understand the concept of dwelling as a physical, emotional, and social act, and explore the reasons and forms through which people choose to live together.
2	Critically investigate the spatial, cultural, and social dynamics of community living.
3	Foster inclusive design thinking by engaging with diverse user needs and by analyzing how shared and personal spaces evolve within various settlement typologies.

Course Outline

- From space to dwelling: An understanding of what it means to dwell in a space/s and to further explore as to why and how people choose to dwell together.
- Dwelling Together: Explore as to why people live together, and how we have lived together in the past. Questions to be addressed here are: How do we make common decisions? What do we share, and when, where and how does it change to the more intimate, personal space? Which spaces are "designed"? What is the meaning of "organic" growth? What is the meaning of Vernacular Architecture? What is the meaning of the term "sustainable"?
- Explore the character of community spaces and their significance in housing projects. Points of discussion could include different ways of occupying land: rentals, ownership, temporary squatting, organic settlements, informal urban settlements.
- The studio must emphasize the inclusion and integration of differences in age, gender, mobility, health, economic status.
- One major project (from formal apartment) and one minor/time (looking at an informal settlement or vernacular parts of the city or rural setting for settlement/community study and design) assignment to be tackled in the semester.

Note

a. Relevant case studies and literature studies can be given by the studio teachers and report must be compiled by the students.
b. Minimum of two architectural projects must be tackled in semester.
c. One of the design exercises can be carried out as group work to explore possibilities of students working as teams.
d. The portfolio covering the above topics shall be presented for viva.
e. Projects to be presented with help of drawings, sketches, and models. Application of techniques learnt in architectural presentation must be incorporated.
f. Knowledge of the alternative materials and techniques taught in building construction can be incorporated into design and detailing.

REFERENCE BOOKS

1.	Amos Rapoport	House form and culture, Prentice-Hall, 2002
2.	Christopher Alexander	A Pattern Language: Towns, Buildings, Construction, Oxford University Press, 2018, ISBN: 9780190050351, 0190050357

3.	Christopher Alexander	The Timeless Way of Building, Volume 8, Oxford University Press, 1979, ISBN: 9780195024029, 0195024028
4.	Gautam Bhatia	Laurie Baker: Life, Work, Writings, Penguin Books, 1994
5.	Atula Deūḷagāvakara	Laurie Baker: Truth in Architecture, Jyotsna Prakashan, 2014, ISBN: 9788179253984, 8179253988
6.	Otto H Koenigsberger, O. H., Ingersoll, T. G., Mayhew	Manual Of Tropical Housing & Building, Orient Longman Private Limited, 1975, ISBN: 9788125011071, 8125011072

Course Outcomes: Upon completion of this course the student will be able to:	
CO1	Analyse and articulate the difference between space and dwelling
CO2	Describe how dwellings respond to the social, cultural, and environmental factors.
CO3	Demonstrate an ability to interpret various forms of housing and community spaces.
CO4	Develop the architectural solution to the community housing projects.
CO5	Design proposals that reflect sensitivity to inclusivity, sustainability, and diversity of users in housing and community contexts.

Course Articulation Matrix

		POs												**PSOs**			
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
COs	**CO1**			3							3			3			
	CO2		3					3						3			
	CO3			3									3	3			
	CO4			3				3					3	3			
	CO5			3				3					3	3			

BUILDING MATERIALS AND CONSTRUCTION - IV

Contact Hours/Week	:	04	Credits	:	4
Total Lecture Hours	:	15	CIE Marks	:	50
Total Studio Hours	:	45	SEE Marks	:	50
Course Code	:	4ATS02	Exam Mode	:	Viva

Course objectives:	
This course will enable students to:	
1.	Get introduced to the advanced RCC slabs construction.
2.	Know the various applications of steel in the construction industry.
3.	Understand the alternative roofing techniques for buildings.

UNIT I
Introduction to Advanced RCC roofs: Moment framed, Ribbed, Flat/Flat plate and Waffle slab. **Principles and methods of construction:** RCC moment framed, ribbed and waffle slabs. **Principles and methods of construction:** Flat and Flat plate slabs
14 Hours

UNIT II
Structural steel as a building material: Types, properties, uses, manufacturing methods. Life cycle and environmental impact of steel. Steel construction: Steel columns/Stanchions/beam construction; Reuse and repurpose of steel construction and demolition waste. **Principles and methods of construction:** Steel Decking slabs**.**
14 Hours

UNIT III
Introduction to Alternative roofing: Jack Arch, Madras terrace, stone slab roof, inverted earthenpot roof, 'Guna' roof (burnt clay vaulted roof) and Filler slabs, GI/tin sheet roofing, cement corrugated sheets, etc.(low cost roofs and materials in Informal households and health issues) **Principles and methods of construction:** Filler slabs - Introduction to different filler materials, Mangalore tiles, Burnt Clay Bricks, Hollow Concrete blocks, Stabilized Hollow Mud blocks, Clay pots, Coconut shells etc.
12 Hours

UNIT IV
Applications of steel: Uses and manufacturing methods of Steel doors and windows, Steel doors for garages and workshops, Collapsible gate and rolling shutters.
12 Hours

UNIT V
Aluminium as a building material - Types, properties, uses, manufacturing methods and Life cycle environmental impact of aluminium. Thermal properties, energy needs during construction phase. **Aluminium doors/partitions and windows -** Casement, Pivot and Sliding type: Study of joinery details.
12 Hours

Note
a. Building construction guidelines to be referred from National building code (NBC) 2026. b. Lecture on the impact of steel and its products for energy conservation. c. Integrate with Architectural Design studio. d. Site visits / case studies to explore various roof structures to be arranged by studio teachers and report to be compiled by students. e. Market survey of materials should be carried out by students. f. The entire portfolio of construction and materials shall be presented for viva.

REFERENCE BOOKS		
1	Mr Roy Chudley & Roger Greeno	Construction Technology, Edition 4, Prentice Hall, 2009 ISBN: 0131286420, 978-0131286429
2	S. C. Rangwala	Engineering Materials [Material Science], Charotar Publishing House Pvt. Limited, 2008, ISBN: 9788185594965, 8185594961
3	R. Barry	The Construction of Buildings Volume 1, Seventh edition, Blackwell Science Ltd, 1999, ISBN: 8176710016, 978-8176710015
4	Glenn M. Hardie	Building Construction: Principles, Practices, and Materials, Prentice Hall, 1995, ISBN: 0133505707, 9780133505702
5	G. D. Taylor	Materials in Construction, CRC Press, 2013, ISBN: 9781317879022, 1317879023

Course Outcomes: Upon completion of this course the student will be able to:	
CO1	Develop the construction details of slabs using advanced RCC methods.
CO2	Summarize the applications of steel in the construction industry.
CO3	Identify the construction details of composite steel application.
CO4	Explore the alternative roofing techniques for buildings.
CO5	Develop the working drawings for aluminum doors and partitions.

Course Articulation Matrix

		POs												**PSOs**			
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
COs	**CO1**	3													3		
	CO2	3													3		
	CO3	3													3		
	CO4	3						3							3		
	CO5	3													3		

BUILDING INFORMATION MODELING-I

Contact Hours/Week	:	03	Credits	:	3
Total Lecture Hours	:	-	CIE Marks	:	50
Total Practical Hours	:	42	SEE Marks	:	50
Course Code	:	4ATS03	Exam Mode	:	Term Work

Course objectives:	
This course will enable students to:	
1.	Familiarize with the ARCHICAD interface, tools, and BIM concepts to effectively model architectural projects.
2.	Create, modify, and manage architectural elements using ARCHICAD modelling features.
3.	Generate accurate architectural documentation of the project.
4.	Get introduce to the fundamentals and applications of Artificial Intelligence and Generative AI in architecture.
5.	Familiarize with the ARCHICAD interface, tools, and BIM concepts to effectively model architectural projects.

UNIT I
Introduction to Building Information Modeling (BIM): Overview of BIM concepts and workflows. Introduction to ARCHICAD interface, workspace navigation, project setup, template creation, project preferences, layers, views, layouts, and BIM documentation standards.
8 Hours

UNIT II
Building Modelling: Creation and editing of architectural elements including walls, slabs, roofs, openings, doors, windows, and objects. Advanced modelling techniques for stairs, railings, curtain walls, terrain modelling, and complex building forms.
8 Hours

UNIT III
Documentation and Collaboration: Generation of plans, sections, elevations, schedules, and detail drawings. Annotation, dimensions, tags, sheet preparation, BIM collaboration, linking and importing external files, model coordination, and export of drawings for interdisciplinary coordination.
8 Hours

UNIT IV
Integrated BIM Project: Development of a small architectural project using ARCHICAD. Application of BIM workflows, documentation standards, coordination, and project presentation.
9 Hours

UNIT V
AI-enabled BIM workflows; AI-assisted modelling, documentation and visualization; model validation; collaborative BIM; intelligent BIM automation.
9 Hours

REFERENCE BOOKS		
1	Chuck Eastman, Paul Teicholz, Rafael Sacks and	BIM Handbook: A Guide to Building Information Modeling for Owners, Designers, Engineers, Contractors, and Facility

	Kathleen Liston	Managers, 3rd Edition, John Wiley & Sons, 2018. ISBN - 9781119287537
2	Brad Hardin and Dave McCool	BIM and Construction Management: Proven Tools, Methods, and Workflows, 2nd Edition, John Wiley & Sons, 2015. ISBN: 9781118942765
3	Eric Bobrow	Step by Step ARCHICAD 28: Residential Design, Bobrow Consulting Group, 2024. ISBN: 9781732607361
4	Neil Leach	Architecture in the Age of Artificial Intelligence: An Introduction to AI for Architects, Bloomsbury Visual Arts, 2022. ISBN: 9781350244924

Course Outcomes: Upon completion of this course the student will be able to:	
CO1	Summarize BIM concepts, ARCHICAD interface, project setup, and documentation standards.
CO2	Develop architectural models using ARCHICAD modelling tools and techniques.
CO3	Demonstrate BIM-based documentation, collaboration, and model coordination workflows.
CO4	Integrate BIM workflows in developing and presenting an architectural project.
CO5	Interpret the applications of AI-assisted design tools in architectural practice.

Course Articulation Matrix

		POs												**PSOs**			
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
COs	**CO1**					3									3		
	CO2					3									3		
	CO3					3									3		
	CO4					3									3		
	CO5					3									3		

DESIGN OF RCC STRUCTURES

Contact Hours/Week	:	03	Credits	:	3
Total Lecture Hours	:	15	CIE Marks	:	50
Total Practical Hours	:	30	SEE Marks	:	50
Course Code	:	4ATS04	Exam mode	:	Viva

Course objectives:
This course will enable students to:

1.	Explain the fundamental behaviour of concrete and reinforcing steel and the principles of reinforced concrete design.
2.	Apply IS 456:2000 provisions and relevant SP-16 design aids for the design of RCC structural members.
3.	Analyse and design RCC beams, slabs, staircases, columns and isolated footings using the Limit State Method.
4.	Evaluate strength, serviceability and detailing requirements of RCC members and interpret design results.

UNIT I

Concrete: Basic characteristics and constituents of concrete; cement, aggregates and water; grades of concrete; water-cement ratio; workability, strength and durability; basic mix design; concrete specifications and testing.

Reinforced Concrete: Characteristics and behaviour of reinforced concrete; need and types of reinforcement; structural behaviour under different loads; bond between concrete and steel; cover and development length; basic principles of formwork and construction.

Codes and Standards: Introduction to relevant provisions of NBC, IS 456:2000 and IS 875; basic structural load considerations.

9 Hours

UNIT II

RCC Design: Mechanics of reinforced concrete; structural systems; load transfer; design philosophies; Working Stress Method and Limit State Method; characteristic loads and strengths; partial safety factors; design loads as per IS 875.

RCC Beams: Behaviour of reinforced concrete beams under flexure and shear; singly reinforced beams; effective span, effective depth and reinforcement requirements; basic design principles.

Design of RCC Beams: Design of simply supported, fixed and cantilever singly reinforced beams using IS 456:2000 and SP 16; detailing of longitudinal and shear reinforcement.

9 Hours

UNIT III

Introduction to RCC Slabs: Structural behaviour and load transfer; one-way and two-way slabs; span and support conditions; effective span and depth; reinforcement requirements.

Design of RCC Slabs: Design of one-way and two-way RCC slabs using IS 456:2000 and SP 16; calculation of loads, bending moments and reinforcement; detailing and reinforcement layout.

9 Hours

UNIT IV

RCC Stairs: Structural behaviour and types of RCC stairs; design considerations; effective span, loads and support conditions; design of dog-legged RCC stairs using IS 456:2000 and SP

16; reinforcement detailing.
RCC Columns: Behaviour of columns under axial and combined loads; types of columns; short and long columns; effective length and slenderness; design of short and long RCC columns using IS 456:2000 and SP 16; reinforcement and detailing.

9 Hours

UNIT V

RCC Foundations: Introduction to foundation systems; load transfer from columns to soil; types of RCC footings; basic principles of foundation design.
Design of RCC Footings: Design of isolated RCC footings using IS 456:2000 and SP 16; determination of footing dimensions; soil pressure; bending and shear considerations; reinforcement requirements; detailing and reinforcement layout.
Integration and Detailing: Interpretation of RCC structural drawings; coordination of beams, slabs, columns, stairs and foundations; preparation of basic structural layouts and reinforcement details.

9 Hours

Note

a. Relevant case studies and literature studies can be given by the studio teachers and report must be compiled by the students.
b. Site visits to be arranged by studio teacher.
c. Introduction to structural design considerations using software.
d. Design considerations to be referred from IS 456:2000.

REFERENCE BOOKS

1	Bureau of Indian Standards (BIS)	IS 456-2000 Plain and Reinforced Concrete - Code of Practice, 4th Revision, 10th reprint, 2007.
2	Bureau of Indian Standards (BIS)	IS SP-16 (1980): Design Aids for Reinforced Concrete to IS 456:1978 [CED 2: Cement and Concrete], 11th Reprint, March 1999.
3	Martin Bechthold and Daniel L Schodek	STRUCTURES, Pearson Education, New Delhi. 7th Edition, 2014, ISBN (13): 978-0-13-255913-3, ISBN (10):0-13-255913-3
4	Robers A Heller and Deborah J Oakley	Salvadori's Structure in Architecture - Pearson Education, New Delhi. 4th Edition, 2017, ISBN (13): 978-0-13-280320-5, ISBN (10):0-13-280320-8

Course Outcomes:
Upon completion of this course the student will be able to:

CO1	Interpret the behaviour and properties of concrete and reinforcing steel and the fundamental principles of RCC design.
CO2	Analyse and design singly and doubly reinforced RCC beam for flexure, shear, bond and torsion using IS 456:2000.
CO3	Analyse and design one-way and two-way RCC slabs and staircases using appropriate codal provisions.
CO4	Analyse and design RCC columns and isolated footings subjected to axial load and bending moment.
CO5	Evaluate RCC members for strength, serviceability and detailing requirements and interpret the design results using codal provisions/design aids.

Course Articulation Matrix

		POs												PSOs			
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
COs	**CO1**	3	2	1											3		
	CO2	3	3	3											3		
	CO3	3	3	3											3		
	CO4	3	3	3											3		
	CO5	3	3	3											3		

HISTORY OF ARCHITECTURE - IV

Contact Hours/Week	:	03	Credits	:	3
Total Lecture Hours	:	42	CIE Marks	:	50
Total Tutorial Hours	:	--	SEE Marks	:	50
Course Code	:	4ATT01	Exam mode	:	Theory

Course objectives: This course will enable students to:	
1.	Comprehend and relate to the theoretical and philosophical basis of western architecture.
2.	Get introduced to the development of architectural form with reference to technology, materials, style and character in early western architecture.
3.	Study the concepts and philosophies of Greek, Roman, Byzantine, Medieval and Gothic architecture through critical analysis of appropriate examples.
4.	Understand architecture as evolving within specific cultural contexts including aspects of politics, society, religion, climate and technology.
5.	Comprehend and relate to the theoretical and philosophical basis of western architecture.

UNIT I

Introduction to Minoan &Mycenae civilization: Citadel of Tiryns, The Treasury of Atrius.

Classical - Greek Architecture, Greek temple layout, principles of design, proportion, composition, visual effects (Optical corrections). Evolution of Doric, Ionic, Corinthian, and Composite orders.

Study of principles of design of Greek buildings through Greek temples – Parthenon, Athens-Erechtheion, Athens. Public buildings– Acropolis and Agora and Theatre at Epidaurus. House of Colline and House of Masks.

8 Hours

UNIT II

Introduction to Etruscan and Roman Architecture: Architectural characteristic features and study of Roman Classical Architecture: Study of principles of design, Innovations, Engineering aspects in construction technology. Eg: -Roman orders: Tuscan and Composite. Roman Temples: Pantheon, Rome, Amphitheatre: Colosseum, Rome, Amphitheatre of Pompeii Public bath: Thermae of Caracalla, Aqueducts: Pont Du Gard, Nimes, Circus: Circus Maximus, Rome.

8 Hours

UNIT III

Architectural characteristic features and study of Roman Forum –Trajan's Forum and Basilica of Trajan, Triumphal arches: Arch of Septimius Severus, Arch of Constantine

Evolution of Ecclesiastical architecture: Early Christian - Study of Architectural Characteristics, evolution of church plan and principles of design of buildings.

Eg: - Basilicas: Old St Peter's Basilica, Basilica of St Clemente, Baptistery: Baptistery at Nocera, Baptistry of Constantine, Rome.

8 Hours

UNIT IV

Ecclesiastical 1: Byzantine Architecture - Study of Architectural Characteristics, structural concepts, material and ornamentation. Eg: Hagia Sophia at Constantinople and St. Marks Basilica at Venice.

Introduction to Medieval architecture- Italian, French, Anglo Saxon and Norman. Italian Romanesque. Eg: -The Cathedral, the Campanile and the Baptistery, Pisa French Romanesque. Eg: Angouleme Cathedral, France, the Abbey Church of Sainte-Foy in Conques, France
9 Hours

UNIT V
Ecclesiastical 2: Gothic - Study of Architectural Characteristics, structural concepts and ornamentation. Concept of pointed arch, the ribbed vault and the flying buttress and aesthetic elements. Eg: Basilica of Saint Denis, France, Chartres Cathedral, West Minster abbey, London, Notre Dame, Paris, Reims Cathedral, Reims (France), Milan Cathedral, Lombardy, Italy
9 Hours

Note
a. Assignments to include study of concepts relating to cultural and religious systems, structure, climatic interfaces and integration of all these in the resultant forms. b. Models and analytical studies to be done individually or in groups.

REFERENCE BOOKS		
1	Fletcher, Sir Banister	Sir Banister Fletcher's A History of Architecture, 20th Edition, Architectural Press, 1996. ISBN: 9780750622677.
2	Stierlin, Henri	Greece: From Mycenae to the Parthenon, Taschen, 2009. ISBN: 9783836510387.
3	Stierlin, Henri	The Roman Empire: From the Etruscans to the Decline of the Roman Empire, Taschen, 1997. ISBN: 9783822885628.
4	Barral i Altet, Xavier	The Romanesque: Towns, Cathedrals and Monasteries, edited by Henri Stierlin, Taschen, 1998. ISBN: 9783822872017.

Course Outcomes: Upon completion of this course the student will be able to:	
CO1	Identify the architectural characteristics, principles of design, proportions and orders of Minoan, Mycenaean and Classical Greek architecture**.**
CO2	Analyze the architectural, structural and engineering innovations of Etruscan and Roman architecture through temples, public buildings and infrastructure.
CO3	Analyze the evolution of Early Christian architecture and its relationship with ecclesiastical planning, spatial organization and structural systems.
CO4	Compare the architectural characteristics, structural concepts and ornamental features of Byzantine and Romanesque architecture across different European regions.
CO5	Analyze the architectural and structural principles of Gothic architecture, including pointed arches, ribbed vaults and flying buttresses, through representative buildings.

Course Articulation Matrix

		POs												PSOs			
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
COs	**CO1**	3														3	
	CO2	3														3	
	CO3	3														3	
	CO4	3														3	
	CO5	3														3	

BUILDING SERVICES - II
(Electrical and Illumination)

Contact Hours/Week	:	03	Credits	:	3
Total Lecture Hours	:	42	CIE Marks	:	50
Total Tutorial Hours	:	--	SEE Marks	:	50
Course Code	:	4ATT02	Exam mode	:	Theory

Course objectives:	
This course will enable students to:	
1.	Get introduced to electrical services and its importance in Architecture.
2.	Familiarize with the fundamentals of illumination.
3.	Develop skills to design lighting schemes for various Architectural spaces.

UNIT I

Introduction to Electrical Services: Introduction to commonly used terminology – Voltage, Current, Power, Connected Load, Max. Demand, Load Factors, Diversity Factor Etc.; Importance of Electrical Services and Its implications on building design; Introduction to Codes and Standards like National Building Code, National Electric Code (including Renewable/Clean energy/ Green Building codes), IS Codes, State Electricity Board and Chief **Electrical Inspectorate Guidelines Supply and distribution of electricity to buildings:** Brief introduction to various Sources for Electricity generation. Introduction to Transmission and Distribution system (from generation to Building's main) - Cables–HT/LT, Voltage Levels, Sub- Stations, Ring Main Units, Metering Panels, HT Panel, Transformers. Green Power Generation and minimizing ecological imbalance through sustainable Green technologies for the safety of people.

8 Hours

UNIT II

Introduction to Renewable Energy Systems (On-Site and Off-Site): Understanding the primary importance of thermal load reduction (i.e. reducing artificial cooling and heating energy needs in buildings) as a prerequisite for Net Zero Energy Building Design. Solar, Wind, Bio-Mass, Achieving Net Zero Building Design through utilization of above natural resources; Energy Conservation techniques in Electrical systems.

Residential Building internal electrical distribution system & Commercial Building internal electrical distribution system: Power Requirement, Incoming Power Source Voltage, RMU, Transformers, HT Metering & Sub Metering Panels, LT Panels, Rising Mains, Sub-Mains, Circuit-Mains, Generators, UPS requirements, Server power requirements, Point Wiring, Point Matrix, Utility Loads, Wiring Systems, Wiring Installation systems, sustainable (solar/wind powered) electrical generation and distribution systems in high rise buildings.

8 Hours

UNIT III

Switch-gear & Protection Devices – Fuses, Breakers: Miniature Circuit Breakers; Earth Leakage Circuit Breakers; Mould-ed Case Circuit Breakers & Air Circuit Breakers and Protection Relays.

Earthing & Lightning Protection System: Definition, Purpose; Types of Earthing Systems, Factors affecting selection and system specification - Type of Soil, water table, soil resistivity etc. Brief about new advances in earthing systems; Lighting system design - Factors affecting the system specification, basic rules as per NBC and other relevant codes.

9 Hours

UNIT IV
Fundamentals of illumination: Quality & Quantity of Lighting; Recommended Lux Levels; Type of Lamps –Incandescent, Discharge Lamps, Fluorescent, CFL, LED and OLED. Integration of Day lighting with Artificial Lighting, Control Systems, Laws of illumination, high energy and low energy (sustainable) lighting. **Techniques, Principles and Applications:** Lighting Methods - Ambient, Task & Accent lighting; Systems of Luminaries - Up Lighting, Down-Lighting, Spot Lighting etc.; Street Lighting, Façade Lighting, Landscape Lighting, Architectural Typologies; Preparation of Lighting Layout.
9 Hours

UNIT V
Extra Low Voltage systems: Telephone; Data & Cable TV Networking; Service provider requirements; Point matrix for Individual residential / Apartment. **Electrical Layout Design and Load Estimation:** Residential Electrical Layout Design (using symbols as per IS codes), Compliance with local building codes; and Electrical Load Calculations.
8 Hours

Note
a. Assignments/Exercises related to each unit to be carried out. b. Site visits to be arranged by faculty. c. National building code to be referred.

REFERENCE BOOKS		
1	L Uppal	"Electrical Wiring, Estimating and Costing", Khanna Publishers, 2003
2	Aly S. Dadras	Electrical Systems for Architects, McGraw-Hill, 2010, ISBN: 9780070150782, 0070150788
3	H Cotton	"Electrical Technology", 7th Edition, CBS Publishers & Distributors, 2005, ISBN: 9788123909288, 8123909284
4	Susan M. Winchip	Fundamentals of Lighting: Studio Instant Access, Bloomsbury Academic, 2017, ISBN: 9781501317668, 1501317660
5	Dr. Ramana Pilla Dr. M Surya Kalavathi	Basic Electrical Engineering, S Chand & Company Limited, 2022, ISBN: 9789352835072, 9352835077
6	National electric Code, Indian Electricity Rules 1956, Energy Conservation and Building Code.	
7	National Building Code, 2016 – Part 8 (Section 1, 2, 6). 173rd EC dated 31.07.2023	
8	Handbook of Lighting Design by Ruediger Ganslandt, Harald Hofmann; ERCO Edition	
9	Code of Practice for Interior Illumination (IS 3646-1 (1992); Indian Standard - BIS.	

Course Outcomes: Upon completion of this course the student will be able to:	
CO1	Identify the importance & sources of electricity.
CO2	Summarize the importance of energy conservation in buildings.

CO3	Differentiate the types of wiring systems and protective devices.
CO4	Identify appropriate lighting fixtures for various architectural spaces and calculate the illumination.
CO5	Develop electrical layout for the residential building.

Course Articulation Matrix

		POs												PSOs			
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
COs	**CO1**	3													3		
	CO2	3													3		
	CO3	3													3		
	CO4	3													3		
	CO5			3							3		3		3		

PROFESSIONAL ELECTIVE – II

CRAFTSMANSHIP IN WOOD WORKING

Contact Hours/Week	:	02	Credits	:	2
Total Lecture Hours	:	-	CIE Marks	:	50
Total Studio Hours	:	28	SEE Marks	:	50
Course Code	:	ATPE04	Exam Mode	:	Viva

Course objectives:	
This course will enable students to:	
1.	Introduce the properties, types, applications and basic woodworking techniques relevant to architectural construction and design.
2.	Develop an understanding of traditional and contemporary woodworking processes, tools, joinery and fabrication methods.
3.	Enable students to design, detail and communicate wood-based architectural elements in coordination with craftsmen, fabricators and vendors.

UNIT I
Wood as a Material **Introduction to Wood:** Structure and characteristics of wood; hardwoods and softwoods; locally available and engineered wood; physical and mechanical properties; moisture content, seasoning and preservation. **Wood Products:** Plywood, blockboard, MDF, particle board, OSB, laminates and veneers; selection of wood and wood products based on application. **Woodworking Tools and Processes:** Hand tools and basic machinery; measuring, marking, cutting, planing, drilling, turning, sanding and finishing; workshop safety.
6 Hours

UNIT II
Wooden Structures and Building Elements **Structural Woodwork:** Principles of timber construction; structural members—posts, beams, joists, rafters and trusses; traditional and contemporary timber framing. **Doors and Windows:** Types and components of wooden doors and windows; frames, shutters, panels, glazing and hardware; detailing and installation. **Joinery:** Principles of timber joints; butt, lap, mortise and tenon, dovetail, tongue and groove and dowel joints; selection of joints for different applications.
6 Hours

UNIT III
Furniture and Product Design **Furniture Design:** Ergonomics and anthropometrics; furniture components and construction; custom-designed and modular furniture. **Fabrication and Production:** Handcrafted and machine-made furniture; CNC and digital fabrication; mass production and modular systems; material optimisation and joinery. **Outdoor Furniture:** Selection of durable wood and wood products; weather protection, finishes and construction details; sustainable and repairable furniture design.
6 Hours

UNIT IV
Interior Woodwork and Panel Systems **Interior Applications:** Wall panelling, partitions, ceilings, screens, cabinetry and built-in

furniture; wood as a finish and spatial element. **Panel Processing:** Cutting, edging, drilling, routing and assembly of engineered wood panels; hardware and fastening systems; modular and demountable systems. **Interior Installation:** Site measurement and setting out; fixing and installation; junctions and detailing; coordination with electrical, plumbing and other services; workmanship and quality control.
5 Hours

UNIT V
Millwork, Craft and Professional Practice **Millwork:** Concept and applications; wardrobes, kitchens, cabinets, counters, shelving and architectural joinery; standard and customised millwork. **Details and Documentation:** Working drawings; plans, elevations, sections and joinery details; material specifications; hardware schedules; cutting lists and basic estimation. **Craftsmanship and Contemporary Practice:** Traditional woodworking skills and contemporary fabrication; interaction with craftsmen, carpenters and vendors; workshop-to-site workflow; quality, safety and sustainability. **Design Exercise:** Design and development of a small wood-based architectural element or furniture product, including drawings, material selection, joinery details, prototype/fabrication and presentation.
5 Hours

REFERENCE BOOKS		
1	Bruce Hoadley	Understanding Wood: A Craftsman's Guide to Wood Technology, Taunton Press, 2000. ISBN: 978-1561583584.
2	R. Bruce Hoadley	Identifying Wood: Accurate Results with Simple Tools, Taunton Press, 1990. ISBN: 978-0942391042.
3	Charles George Ramsey and Harold Reeve Sleeper	Architectural Graphic Standards, 12th Edition, Wiley, 2016. ISBN: 978-1118909508.
4	Albert Jackson and David Day	Collins Complete Woodworker's Manual, HarperCollins, 2005. ISBN: 978-0007181883.
5	Peter Korn	Why We Make Things and Why It Matters: The Education of a Craftsman, David R. Godine, 2013. ISBN: 978-1567924581.

Course Outcomes:
Upon completion of this course the student will be able to:

CO1	Identify the properties, types, products and applications of wood and wood-based materials in architecture.
CO2	Apply appropriate woodworking techniques, tools and joinery methods to develop basic architectural components.
CO3	Design and develop wood-based furniture and products considering ergonomics, fabrication, material efficiency and durability.
CO4	Apply wood and panel-based systems to develop interior elements, doors, windows, partitions and built-in installations with appropriate detailing.
CO5	Prepare basic working drawings, material specifications and joinery details and communicate effectively with craftsmen, fabricators and vendors for execution.

Course Articulation Matrix

	POs	**PSOs**

		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
COs	**CO1**	3											3	3			
	CO2	3											3	3			
	CO3	3											3	3			
	CO4	3											3	3			
	CO5	3											3	3			

ARCHITECTURAL DOCUMENTATION

Contact Hours/Week	:	02	Credits	:	2
Total Lecture Hours	:	-	CIE Marks	:	50
Total Studio Hours	:	28	SEE Marks	:	50
Course Code	:	ATPE05	Exam Mode	:	Viva

Course objectives:	
This course will enable students to:	
1.	Introduce the principles, tools and methodologies of architectural documentation through archival research, field surveys, measured drawings and photography.
2.	Develop skills in measuring, recording, mapping, analysing and representing buildings, streetscapes and settlements.
3.	Enable students to document and interpret architectural character, heritage values, materials, construction and cultural context through systematic documentation

UNIT I

Principles of Documentation: Purpose, scope and significance of architectural documentation; documentation as a tool for understanding buildings, streets and settlements; types and levels of documentation.

Documentation Methods and Tools: Field observation; measured drawings; photography; sketches; mapping; interviews; digital tools and surveying equipment; accuracy and recording standards.

Archival Research: Historical documents, old photographs, maps, drawings, municipal records and published sources; identification and evaluation of secondary information.

Reconnaissance Survey: Preliminary site study; identification of architectural character, building typologies, significant elements and areas for detailed documentation.

6 Hours

UNIT II

Site and Context: Site boundaries, access, orientation, topography, vegetation and surrounding development; relationship between building and context.

Settlement and Street Mapping: Street pattern, plot divisions, building uses, built and open spaces, movement patterns, landmarks and significant features; preparation of base maps.

Architectural Character: Building typologies, scale, proportion, façade character, materials, streetscape elements and public-private relationships.

Field Recording: Site sketches, photographic surveys, observations, interviews and contextual information; documentation of people, activities and environmental conditions.

6 Hours

UNIT III

Survey Techniques: Measurement of horizontal and vertical dimensions; angles, levels and heights; centre lines, datum, benchmarks and orientation; recording conventions and notations.

Measured Drawings: Preparation of plans, floor plans, roof plans, reflected ceiling plans, elevations and sections from field measurements.

Architectural Elements: Documentation of doors, windows, stairs, roofs, columns, structural elements, finishes and other significant features.

Materials and Construction: Identification and representation of materials; construction techniques; structural systems; joinery and junction details.

6 Hours

UNIT IV

Detailed Documentation: Measured drawings of openings, ornamental elements, furniture, joinery, structural details and significant architectural features.
Heritage Documentation: Identification of historical, architectural, cultural, social and environmental values; significance assessment; condition and alterations.
Photographic and Visual Documentation: Systematic photographic recording; detail photography; sketches and visual notes; integration of photographic and measured information.
Documentation and Analysis: Interpretation of field data; comparison with archival information; identification of changes, additions and transformations; preparation of analytical diagrams.

5 Hours

UNIT V

Data Compilation: Organisation and verification of field measurements, photographs, sketches, archival information and survey notes.
Drawing Development: Preparation of accurate drawings from field data; plans, sections, elevations, roof plans and detailed drawings; conventions, scales, annotations and material legends.
Analysis and Interpretation: Spatial, architectural, structural, material, cultural and contextual analysis; relationship between measured drawings and architectural character.
Documentation Report: Compilation of drawings, photographs, maps, archival information and analytical studies into a comprehensive building, street or settlement documentation portfolio.

5 Hours

REFERENCE BOOKS

1	James Douglas	Building Surveys and Reports, 4th Edition, Wiley-Blackwell, 2010. ISBN: 978-1405195639.
2	John A. Burns and H. M. M. Khan	Recording Historic Structures, 2nd Edition, The American Institute of Architects Press, 2004. ISBN: 978-1929494220.
3	David Watt	Surveying Historic Buildings, 2nd Edition, Routledge, 2011. ISBN: 978-0415591783.
4	James M. Fitch	Historic Preservation: Curatorial Management of the Built World, University Press of Virginia, 1990. ISBN: 978-0813912724.
5	Bernard M. Feilden	Conservation of Historic Buildings, 3rd Edition, Architectural Press, 2003. ISBN: 978-0750658638.

Course Outcomes:
Upon completion of this course the student will be able to:

CO1	Identify appropriate tools, sources and methodologies for documenting buildings, streets, settlements and heritage structures.
CO2	Conduct field surveys and prepare site, settlement and streetscape documentation through mapping, observation, photography and sketches.
CO3	Prepare accurate measured drawings including plans, sections, elevations, roof plans and architectural details from field data.
CO4	Analyse architectural character, materials, construction, alterations and heritage values using field and archival information.
CO5	Compile, interpret and present comprehensive architectural documentation through drawings, photographs, maps, archival records and analytical studies**.**

Course Articulation Matrix

		POs												PSOs			
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
COs	**CO1**	3											3	3			
	CO2	3											3	3			
	CO3	3											3	3			
	CO4	3											3	3			
	CO5	3											3	3			

ART APPRECIATION

Contact Hours/Week	:	02	Credits	:	2
Total Lecture Hours	:	-	CIE Marks	:	50
Total Studio Hours	:	28	SEE Marks	:	50
Course Code	:	ATPE06	Exam Mode	:	Viva

Course objectives: This course will enable students to:	
1.	Introduce the fundamental concepts, elements, principles, media and forms of visual and performing arts.
2.	Develop the ability to observe, interpret and critically appreciate artworks in their historical, cultural, social and aesthetic contexts.
3.	Explore the relationship between art, architecture, space and society through Indian and global art practices.

UNIT I
Understanding Art: Definitions, nature, purpose and functions of art; art as expression, communication and cultural representation; relationship between art, society and environment. **Elements of Art:** Line, shape, form, colour, texture, space, mass, light and composition. **Principles of Art:** Balance, proportion, rhythm, harmony, contrast, emphasis, movement, unity and scale. **Art and Context:** Social, cultural, political and historical contexts; interpretation of form and content; introduction to aesthetics.
6 Hours

UNIT II
Art Movements and Styles: Introduction to major art styles and movements; realism, impressionism, expressionism, cubism, surrealism, abstract art, modernism and postmodernism. **Indian Art:** Overview of prehistoric, Indus Valley, Buddhist, Hindu, Jain, Islamic, Mughal, colonial and modern Indian art. **Indian Art Forms and Crafts:** Painting, sculpture, textiles, pottery, metalwork, woodwork and other traditional crafts; regional variations and cultural significance. **Artists and Art Traditions:** Selected Indian and international artists; their works, styles and contributions.
6 Hours

UNIT III
Sculpture: Forms, materials, techniques and spatial relationships; relief and three-dimensional sculpture; traditional and contemporary practices. **Installation and Spatial Art:** Site-specific art; installation, environmental art and experiential spaces; interaction between artwork, architecture and viewer. **Contemporary Art Forms:** Pop art, public art, commercial art, industrial art, functional art, digital art and multimedia practices. **Art and Technology:** Digital media, photography, video, projection and interactive art; changing modes of artistic expression.
6 Hours

UNIT IV
Art Appreciation: Observation, description, analysis, interpretation and evaluation of artworks.

Art Criticism: Formal, contextual, historical and comparative approaches; understanding artist, medium, technique, subject and intention.
Visual Analysis: Reading composition, colour, form, symbolism, material and spatial relationships; developing critical vocabulary.
Appreciation Exercises: Analysis and discussion of selected artworks, exhibitions, installations and public art; written and visual responses.

5 Hours

UNIT V

Performing Arts: Music, dance and theatre; elements of performance; relationship between performer, audience and space.
Performance and Architecture: Theatre, auditorium and performance spaces; spatial requirements, movement, acoustics, stage and audience relationships.
Literature and Art: Poetry, stories and literature as sources of artistic and architectural expression; narrative, symbolism and imagination.
Art and Built Environment: Integration of visual, spatial and performing arts with architecture; art in public spaces; cultural identity and placemaking.
Integrated Appreciation: Study and presentation of selected artwork, artist, performance, installation or cultural space through critical observation and interpretation.

5 Hours

REFERENCE BOOKS

1	Gombrich, E. H	The Story of Art, Phaidon Press, 1995. ISBN: 978-0714832470.
2	Kleiner, Fred S	Gardner's Art Through the Ages: A Global History, Cengage Learning, 2020. ISBN: 978-1337696678.
3	Arnheim, Rudolf	Art and Visual Perception: A Psychology of the Creative Eye, University of California Press, 1974. ISBN: 978-0520243835.
4	Feldman, Edmund Burke	Art as Image and Idea, Prentice-Hall, 1967. ISBN: 978-0130467164.
5	Vatsyayan, Kapila	The Square and the Circle of the Indian Arts, Abhinav Publications, 1983. ISBN: 978-8125000206.

Course Outcomes:
Upon completion of this course the student will be able to:

CO1	Identify the fundamental elements, principles, media and concepts of art and aesthetics.
CO2	Analyse major art styles, movements and Indian art traditions in their historical, cultural and social contexts.
CO3	Interpret visual, spatial and contemporary art forms including sculpture, installation, public, digital and functional art.
CO4	Apply basic principles of art criticism to observe, analyse, interpret and evaluate selected artworks.
CO5	Relate visual and performing arts, literature and cultural practices to architecture, spatial experience and the built environment**.**

Course Articulation Matrix

		POs												PSOs			
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
COs	**CO1**	3											3	3			
	CO2	3											3	3			
	CO3	3											3	3			
	CO4	3											3	3			
	CO5	3											3	3			

UNIVERSAL HUMAN VALUES

Contact Hours/Week	:	01	Credits	:	1
Total Lecture Hours	:	15	CIE Marks	:	100
Total Studio Hours	:	-	SEE Marks	:	-
Course Code	:	SHS02-AT	Exam Mode	:	-

Course objectives:	
This course will enable students to:	
1.	Appreciate the essential complementary between 'VALUES' and 'SKILLS' to ensure sustained happiness and prosperity which are the core aspirations of all human beings.
2.	Facilitate the development of a Holistic perspective among students towards life and profession as well as towards happiness and prosperity based on a correct understanding of the Human reality and the rest of existence. Such a holistic perspective forms the basis of Universal Human Values and movement towards value-based living in a natural way.
3.	Highlight plausible implications of such a Holistic understanding in terms of ethical human conduct, trustful and mutually fulfilling human behaviour and mutually enriching interaction with Nature.

UNIT I
Right Understanding, Relationship and Physical Facility (Holistic Development and the Role of Education) Understanding Value Education, Self-exploration as the Process for Value Education, Continuous Happiness and Prosperity – the Basic Human Aspirations, Happiness and Prosperity – Current Scenario, Method to Fulfil the Basic Human Aspirations
3 Hours

UNIT II
Harmony in the Human Being Understanding Human being as the Co-existence of the Self and the Body, Distinguishing between the Needs of the Self and the Body, The Body as an Instrument of the Self, Understanding Harmony in the Self, Harmony of the Self with the Body, Programme to ensure self-regulation and Health
3 Hours

UNIT III
Harmony in the Family and Society Harmony in the Family – the Basic Unit of Human Interaction, 'Trust' – the Foundational Value in Relationship, 'Respect' – as the Right Evaluation, Other Feelings, Justice in Human-to-Human Relationship, Understanding Harmony in the Society, Vision for the Universal Human Order
3 Hours

UNIT IV
Harmony in the Nature/Existence Understanding Harmony in the Nature, Interconnectedness, self-regulation and Mutual Fulfilment among the Four Orders of Nature, Realizing Existence as Co-existence at All Levels, The Holistic Perception of Harmony in Existence
3 Hours

UNIT V
Implications of the Holistic Understanding – a Look at Professional Ethics Natural Acceptance of Human Values, Definitiveness of (Ethical) Human Conduct, A Basis for Humanistic Education, Humanistic Constitution and Universal Human Order, Competence in Professional Ethics, Holistic Technologies, Production Systems and Management Models-Typical Case Studies, Strategies for Transition towards Value-based Life and Profession
3 Hours

REFERENCE BOOKS:

1.	Gaur, R.R. &Sangal R	'Foundation Course in Human Values and Professional Ethics; Presenting a universal approach to value education through self-exploration', Excel Books, Bangalore, 2016, ISBN: 978-8-174-46781-2
2.	Tripathi A.N.	'Human Values', New Age International Publisher, 2003, ISBN: 81-224-1426-5

Course Outcomes: Upon completion of this course the student will be able to:	
CO1	Become more aware of themselves, and their surroundings (family, society, nature).
CO2	Become more responsible in life, and value human relationships and human society.
CO3	Have better critical ability in handling problems and in finding sustainable solutions

Course Articulation Matrix

		POs												**PSOs**			
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**	**4**
COs	**CO1**	3												1			
	CO2	3	2											1			
	CO3	3												1			

NSS, SPORTS, YOGA AND PRANAYAMA, MUSIC

Contact Hours/Week	:	02	Credits	:	Audit
Total Lecture Hours	:	-	CIE Marks	:	100
Total Practical Hours	:	30	SEE Marks	:	--
Course Code	:	PMC1	Exam Mode	:	--
		PMC2			
		PMC3			
		PMC4			