KLE Technological University | Creating Value, Leveraging Knowledge

Curriculum Structure and Curriculum Content for the Academic Batch 2021-26

School of Architecture

FMCD2009 / 2.0

KLE Technological University | Creating Value, Leveraging Knowledge

School of Architecture

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Vision

KLE Technological University will be a national leader in Higher Education–recognized globally for innovative culture, outstanding student experience, research excellence and social impact.

Mission

KLE Technological University is dedicated to teaching that meets highest standards of excellence, generation and application of new knowledge through research and creative endeavors.

The three-fold mission of the University is:

- To offer undergraduate and post-graduate programs with engaged and experiential learning environment enriched by high quality instruction that prepares students to succeed in their lives and professional careers.

- To enable and grow disciplinary and inter-disciplinary areas of research that build on present strengths and future opportunities aligning with areas of national strategic importance and priority.

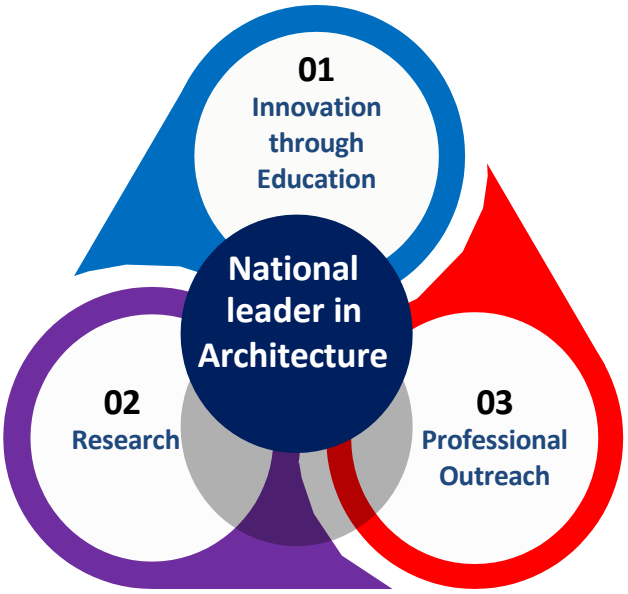
- To actively engage in the Socio-economic development of the region by contributing our expertise, experience and leadership, to enhance competitiveness and quality of life.

As a unified community of faculty, staff and students, we work together with the spirit of collaboration and partnership to accomplish our mission.

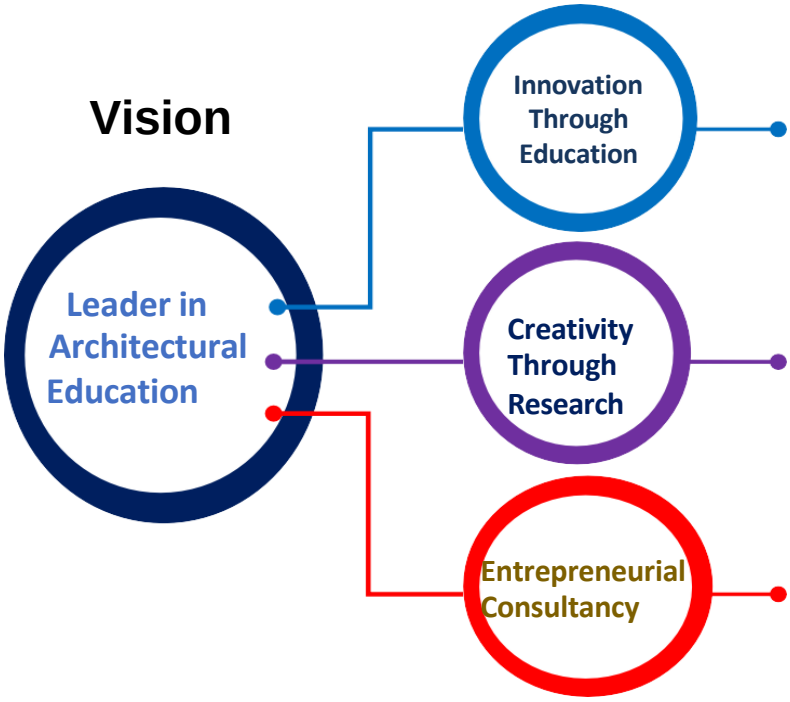
Vision and Mission Statements of the School of Architecture

Vision

KLE Tech – School of Architecture aspire to be one of the nation's premier institutes offering quality education in the domain of architecture and achieve the highest order of excellence by engaging in innovation through education, research and consultancy.



Mission



Offers a learning experience through rigorous curriculum of theory and practice that **develops students technical and professional skill** to succeed in a wide rage carrier.

Pursue advance research through a **culture of discovery, creativity, and innovation** to benefit the humankind.

Contribute as an asset to society, the profession **through professional organization, consultancy** and continuing education.

KLE Tech School of Architecture shall accomplish its mission by working in a team, with the spirit of collaboration and partnership

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School of Architecture

Program Educational Objectives/Program Outcomes and Program-Specific Objectives

Program Educational Objectives -PEOs
The School of Architecture is dedicated to graduating architects
PEO1 - Have artistic sensitivity and creative powers to plan, execute designs with socio cultural, environmental and technological aspects of architecture.
PEO2 -Will have intellectual growth along with the capacity to develop creative and responsible design solutions to unique problems.
PEO3 -Will acquire the individual capabilities necessary for the competent practice of architecture and lifelong learning
PEO4 -Are well acquainted with a wide range of contemporary design approaches.
PEO5 Understand architecture as a creative, productive, innovative and responsible practice.
PEO6--Will have the ability to critically analyses building designs, built forms, built environment and conduct post occupancy evaluation studies.
PEO7 -Have the skill to work and manage collaboratively with teams of architects and other experts involved in the building industry
PEO8 – Can understand and recognize the diversity of user needs, values, behavioral norms, social patterns as they relate to the creation of the built environment.
Program Outcomes -POs
PO1. Professional Communication Skills: ability to write and speak effectively and use representational media appropriate for both within the profession and with the general public.
PO2 . Design Thinking Skills: ABILITY to raise clear and precise questions, use abstract ideas to interpret information, consider diverse points of view, reach well-reasoned conclusions, Investigative Skills: ABILITY to gather, assess, record, and comparatively evaluate relevant information and performance in order to support conclusions related to a specific project or assignment. Architecture design skills. ABILITY to effectively use basic formal, organizational and environmental principles and the capacity of each to inform two and three-dimensional design.

PO3. Pre-Design: ABILITY to prepare a comprehensive program for an architectural project that includes an assessment of client and user needs; an inventory of spaces and their requirements; an analysis of site conditions (including existing buildings); a review of the relevant building codes and standards, including relevant sustainability requirements, and an assessment of their implications for the project; and a definition of site selection and design assessment criteria.
Site Design: ABILITY to respond to site characteristics, including urban context and developmental pattern, historical fabric, soil, topography, ecology and climate in the development of a project design.
Codes and Regulations: ABILITY to design sites, facilities, and systems that are responsive to relevant codes and regulations and include the principles of life safety and accessibility standards.

PO4. Ordering systems: ABILITY to apply the fundamentals of both natural and formal ordering systems and the capacity of each to inform two- and three-dimensional design.
Use of case studies. : ABILITY to examine and comprehend the fundamental principles present in relevant precedents and to make informed choices about incorporating such principles into architecture design projects.

PO5.Socio-cultural study. History and Global Culture: UNDERSTANDING of the parallel and divergent histories of architecture and the cultural norms of a variety of indigenous, vernacular, local, and regional settings in terms of their political, economic, social, ecological, and technological factors.
Cultural Diversity and Social Equity: UNDERSTANDING the diverse needs, values, behavioral norms, physical abilities, and social and spatial patterns that characterize different cultures and individuals and the architect's responsibility to ensure equity of access to sites, buildings, and structures.

PO6.Technical Documentation: ABILITY to make technically clear drawings, prepare outline specifications, and construct models illustrating and identifying the assembly of materials, systems, and components appropriate for a building design.

PO7. Structural system. ABILITY to demonstrate the basic principles of structural systems and their ability to withstand gravitational, seismic, and lateral forces, as well as the selection and application of the appropriate structural system.

PO8.Environmental systems. ABILITY to demonstrate the principles of environmental systems design, how design criteria can vary by geographic region, and the tools used for performance assessment. This demonstration must include active and passive heating and cooling, solar geometry, day lighting, natural ventilation, indoor air quality, solar systems, lighting systems, and acoustics.

PO9 Building Technology. UNDERSTANDING of the basic principles involved in the appropriate selection and application of building envelope systems relative to fundamental performance, aesthetics, moisture transfer, durability, and energy and material resources. Building Materials & Assemblies: UNDERSTANDING of the basic principles used in the appropriate selection of interior and exterior construction materials, finishes, products, components, and assemblies based on their inherent performance, including environmental impact and reuse
PO10 Building service systems. UNDERSTANDING of the basic principles and appropriate application and performance of building service systems, including lighting, mechanical, plumbing, electrical, communication, vertical transportation, security, and fire protection systems
PO11 Financial `considerations.` Construction estimating + scheduling financing, feasibility, OPERATIONAL + life-cycle costs
PO12: Professional practice. Stakeholder Roles. UNDERSTANDING of the relationships among key stakeholders in the design process client, contractor, architect, user groups, local community and the architect's role in reconciling stakeholder needs. Project Management. UNDERSTANDING of the methods for selecting consultants and assembling teams; identifying work plans, project schedules, and time requirements; and recommending project delivery methods. Business practices. UNDERSTANDING the basic principles of a firm's business practices, including financial management and business planning, marketing, organization, and entrepreneurship. Legal responsibilities. UNDERSTANDING of the architect's responsibility to the public and the client as determined by regulations and legal considerations involving the practice of architecture and professional service contract Professional Conduct. UNDERSTANDING the ethical issues involved in the exercise of professional judgment in architectural design and practice and understanding the role of the COA Rules of Conduct and the COA Code of Ethics in defining professional conduct.
PO13: Advanced Design Skills. Research. UNDERSTANDING the theoretical and applied research methodologies and practices used during the design process. Integrated Evaluations. Integrated Evaluations and Decision-Making Design Process: ABILITY to demonstrate the skills associated with making integrated decisions across multiple systems and variables in completing a design project. This demonstration includes problem identification, setting evaluative criteria, and analyzing solutions.

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Curriculum Structure-Overall

Semester: 1 to 10 (2021-2026 Batch) **Total Program Credits : 220**

	I	II	III	IV	V	VI	VII	VIII	IX	X
Course with course code	Architectural Design – I (0-4-0)	Architectural Design – II (0-5-0)	Architectural Design III (0-6-0)	Architectural Design IV (0-6-0) Climate responsive	Architectural Design V (0-6-0) Services/site planning	Architectural Design VI (0-6-0) Housing	Architectural Design VII (Campus planning) (0-7-0)	Architectural Design 1X (Urban Insert) (0-10-0)	Professional Training 0-22-0	Architectural Design - IX (Thesis Project) (0-17-0)
	Building Construction & Materials – I (0-4-0)	Building Construction & Materials – II (0-4-0)	Building Construction & Materials – III (0-4-0)	Building Construction t & Materials - I V (0-4-0)	Building Construction & Materials - V (0-4-0)	Building Construction & Materials - VI (0-4-0)	Building Const & Materials - VII (0-4-0)	Pre-thesis 0-4-0		Professional Practice - II (3-0-0)
	Graphics – I (0-4-0)	Graphics – II (0-4-0)	Services – I (water supply & sanitation) (2-0-0)	Services II (Electricity & Illumination) (2-0-0)	Services III (HVAC) (2-0-0)	Services IV (Acoustic) (2-0-0)	Research methodology and Dissertation (0-3-0)	Construction Management (3-0-0)		Elective V (0-2-0)
	Structures – I (3-0-0)	Structures – II (3-0-0)	Structures – III (3-0-0)	Structures – IV (3-0-0)	Structures – V (3-0-0)	Structures – VI (3-0-0)	Structures – VII (0-3-0)	Professional Practice-I (3-0-0)	-------	-------
	Pre-history of Architecture (2-0-0)	History of Architecture- I (2-0-0)	History of Architecture- II (2-0-0)	History of Architecture III (2-0-0)	History of Architecture IV (2-0-0)	Contemporary Architecture (2-0-0)	Urban Studies (3-0-0)	Elective IV (0-2-0)	-------	-------
	Basic Design (0-3-0)	Digital Tool-I (0-0-1)	Measure Drawing (0-2-0)	Working Drawing 0-2-0	Landscape Design (0-2-0)	Interior Design (0-2-0)	Green building studio (0-2-0)	-------		-------
	Skill Development Workshop I (0-2-0)	Skill Development Workshop II (0-1-0)	Climatology (2-0-0)	Theory of Architecture (2-0-0)	Estimation And Costing (2-0-0)	Digital Tool III (Revit) (0-0-2)	-----	----	-------	-------
	-	Surveying (2-0-0)	Digital Tool-II (0-0-1)	Elective-I (0-1-0)	Elective-II (0-1-0)	Elective-III (0-1-0)	-------	-------	-------	
	Theory = 02 Studio = 05 Lab = 00	Theory = 03 Studio = 04 Lab = 01	Theory = 04 Studio=03 Lab = 01	Theory = 05 Studio = 03 Lab = 00	Theory = 03 Studio's=05 Lab = 00	Theory = 03 Studio's=03 Lab = 01	Theory = 01 Studio's=05	Theory=02 Studio's=03	Theory=00 Studio's=03	
Credits	**22**	22	22	22	22	22	22	22	22	22

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Curriculum Structure-Semester wise

Semester –I

No	Code	Course	Category	L-T/S-P	Credits	Contact Hours	ISA	ESA	Total	Exam Duration (in hrs)
1	21AATC101	ARCHITECTURAL DESIGN-I	PC	0-4-0	4	6	50	50	100	NA
2	21AATC102	BUILDING CONSTRUCTION & MATERIALS-I	BSAE	0-4-0	4	6	50	50	100	NA
3	21AATC103	GRAPHICS-I	PC	0-4-0	4	6	50	50	100	NA
4	21AATC104	SKILL DEVELOPMENT-I	PAEC	0-2-0	2	3	50	50	100	NA
5	21AATC105	PREHISTORIC ARCHITECTURE	PC	2-0-0	2	2	50	50	100	3 HOURS
6	21AATC106	BASIC DESIGN	PC	0-3-0	3	4	50	50	100	NA
7	21AATC107	STRUCTURES-I	BSAE	3-0-0	3	3	50	50	100	3 HOURS
				5-17-0	22	30	350	350	700	

PC – Professional Core BSAE — Building Science and Applied Engineering PAEC—Professional Ability Enhancement Courses PE—Professional Electives

ISA: Internal Semester Assessment ESA: End Semester Assessment, P: Practical, S: Studio, L: Lecture,

Credit	Lecture Hours	Studio Hours	Practical Hours
1	1	1.5	2

Semester –II

No	Code	Course	Category	L-T/S-P	Credits	Contact Hours	ISA	ESA	Total	Exam Duration (in hrs.)
1	21AATC108	ARCHITECTURAL DESIGN-II	PC	0-4-0	4	6	50	50	100	NA
2	21AATC109	BUILDING CONSTRUCTION & MATERIALS-II	BSAE	0-4-0	4	6	50	50	100	NA
3	21AATC110	GRAPHICS-II	PC	0-4-0	3	5	50	50	100	NA
4	21AATC111	HISTORY OF ARCHITECTURE-I	PC	2-0-0	2	3	50	50	100	3 HOURS
5	21AATC112	SKILL DEVELPOMENT WORKSHOP II	PAEC	0-2-0	2	2	50	50	100	NA
6	21AATC113	DIGITAL TOOL-I	PAEC	0-0-1	2	3	50	50	100	NA
7	21AATC114	STRUCTURES-II	BSAE	3-0-0	3	3	50	50	100	3 HOURS
8	21AATP101	SURVEYING	BSAE	0-2-0	2	2	50	50	100	3 HOURS
			TOTAL	5-16-1	22	30	400	400	800	

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Credit	Lecture Hours	Studio Hours	Practical Hours
1	1	1.5	2

Semester- III

No	Code	Course	Category	L-T/S-P	Credits	Contact Hours	ISA	ESA	Total	Exam Duration (in hrs.)
1	21AATC201	Architectural Design III	PC	0-6-0	6	9	50	50	100	NA
2	21AATC202	Building Construction & Materials III	BSAE	0-4-0	4	6	50	50	100	NA
3	21AATC203	Services – I (w s & sanitation)	BSAE	2-0-0	2	2	50	50	100	3 HOURS
4	21AATC204	Climatology	PC	2-0-0	2	2	50	50	100	3 HOURS
5	21AATC205	History of Architecture II	PC	2-0-0	2	2	50	50	100	3 HOURS
6	21AATC206	Measured Drawing	PAEC	0-2-0	2	4	50	50	100	NA
7	21AATC207	Structures – III	BSAE	3-0-0	3	3	50	50	100	3 HOURS
8	21AATP201	Digital Tool-II	PAEC	0-0-1	1	2	50	50	100	NA
			TOTAL	9-12-1	1	22	400	400	800	

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ISA: In-semester Assessment ESA: End Semester Assessment L: Lecture T: Tutorials P: Practical

Credit	Lecture Hours	Studio Hours	Practical Hours
1	1	1.5	2

Semester- IV

No	Code	Course	Category	L-T/S-P	Credits	Contact Hours	ISA	ESA	Total	Exam Duration (in hrs.)
1	21AATC208	Architectural Design IV	PC	0-6-0	6	9	50	50	100	NA
2	21AATC209	Building Construction & Materials IV	BSAE	0-4-0	4	6	50	50	100	NA
3	21AATC210	Services II (Electricity & Illumination)	BSAE	2-0-0	2	2	50	50	100	3 HOURS
4	21AATC211	History of Architecture III	PC	2-0-0	2	2	50	50	100	3 HOURS
5	21AATC212	Theory of Architecture	PC	2-0-0	2	2	50	50	100	3 HOURS
6	21AATC213	Working drawing	PC	0-2-0	2	4	50	50	100	NA
7	21AATC214	Structures – IV	BSAE	3-0-0	3	3	50	50	100	3 HOURS
8 8a 8b 8c 8d	21AATE201 21AATE202 21AATE203 21AATE204 21AATE205	E-Biomimicry in Architecture E-Human Centered Design –I E-Space, Culture & Architecture E-Digital rendering E-Digital 3D	PE	0-1-0	1	2	50	50	100	NA
			TOTAL	9-13-0	22	30	400	400	800	

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ISA: In-semester Assessment ESA: End Semester Assessment L: Lecture T: Tutorials P: Practical

Credit	Lecture Hours	Studio Hours	Practical Hours
1	1	1.5	2

Semester- V

No	Code	Course	Category	L-T/S-P	Credits	Contact Hours	ISA	ESA	Total	Exam Duration (in hrs.)
1	21AATC301	Architectural Design V	PC	0-6-0	6	9	50	50	100	NA
2	21AATC302	Building Construction & Materials V	BSAE	0-4-0	4	6	50	50	100	NA
3	21AATC303	Services III (HVAC)	BSAE	2-0-0	2	2	50	50	100	3 HOURS
4	21AATC304	History Of Architecture - V	PC	2-0-0	2	2	50	50	100	3 HOURS
5	21AATC305	Estimation And Costing	PC	2-0-0	2	2	50	50	100	NA
6	21AATC306	Landscape Design	PC	0-2-0	2	3	50	50	100	NA
7	21AATC307	Structures – V	BSAE	3-0-0	3	3	50	50	100	3 HOURS
8	21AATE301 21AATE302 21AATE303 21AATE304 21AATE305 21AATE306 21AATE307	E- Vernacular Architecture E- Sustainable development of Living Heritage E- Theory of Design E- Non-Conventional Technology E- Architectural Conservation E- Bio-Inspired Architecture E- Architecture and Ecology	PE	0-1-0	1	2	50	50	100	NA
			TOTAL	9-13-0	22	29	400	400	800	

PCA – Professional Core BSAE — Building Science and Applied Engineering PAEC—Professional Ability Enhancement Courses PE—Professional Electives

ISA: In-semester Assessment ESA: End Semester Assessment L: Lecture T: Tutorials P: Practical

Credit	Lecture Hours	Studio Hours	Practical Hours
1	1	1.5	2

Semester- VI

No	Code	Course	Category	L-T/S-P	Credits	Contact Hours	ISA	ESA	Total	Exam Duration (in hrs.)
1	21AATC308	Architectural Design VI	PC	0-6-0	6	9	50	50	100	NA
2	21AATC309	Building Construction & Materials VI	BSAE	0-4-0	4	6	50	50	100	NA
3	21AATC310	Services IV (Acoustic)	BSAE	2-0-0	2	2	50	50	100	3 HOURS
4	21AATC311	Contemporary Architecture	PC	2-0-0	2	2	50	50	100	3 HOURS
5	21AATC312	Interior Design	PC	0-2-0	2	3	50	50	100	3 HOURS
6	21AATC313	Structures – VI	BSAE	3-0-0	3	3	50	50	100	NA
7	21AATC314	Digital Tool III (Revit)	PAEC	0-0-2	2	4	50	50	100	3 HOURS
8	21AATE308 21AATE309 21AATE310 21AATE311 21AATE312 21AATE313	Indigenous Knowledge Systems Sustainable development of historic towns, villages and cities-II Smart and Intelligent Buildings Urban Legislation, Policies and Economics Analyzing Architecture Barrier Free Design	PE	0-1-0	1	2	50	50	100	NA
			TOTAL	9-13-0	22	31	400	400	800	

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ISA: In-semester Assessment ESA: End Semester Assessment L: Lecture T: Tutorials P: Practical

Credit	Lecture Hours	Studio Hours	Practical Hours
1	1	1.5	2

Semester- VII

No	Code	Course	Category	L-T/S-P	Credits	Contact Hours	ISA	ESA	Total	Exam Duration (in hrs.)
1	21AATC401	Architectural Design VII (Campus Planning)	PC	0-7-0	7	10	50	50	100	NA
2	21AATC402	Building Construction & Materials VII	BSAE	0-4-0	4	6	50	50	100	NA
3	21AATC403	Research Methodology And Dissertation	PC	0-3-0	3	4	50	50	100	NA
4	21AATC404	Structures – VII	BSAE	0-3-0	3	4	50	50	100	NA
5	21AATC405	Urban Studies	PC	3-0-0	3	3	50	50	100	3 HOURS
6	21AATC406	Green Building Studio	PC	0-2-0	2	2	50	50	100	NA
			TOTAL	3-19-0	22	29	300	300	600	

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ISA: In-semester Assessment ESA: End Semester Assessment L: Lecture T: Tutorials P: Practical

Credit	Lecture Hours	Studio Hours	Practical Hours
1	1	1.5	2

Semester- VIII

No	Code	Course	Category	L-T/S-P	Credits	Contact Hours	ISA	ESA	Total	Exam Duration (in hrs.)
1	21AATC408	Architectural Design VIII (Urban Insert)	PC	0-10-0	10	15	50	50	100	NA
2	21AATC409	Pre Thesis	BSAE	0-4-0	4	6	50	50	100	NA
3	21AATC410	Professional Practice I	PC	3-0-0	3	3	50	50	100	3 HOURS
4	21AATC411	Construction And Project Management	BSAE	3-0-0	3	3	50	50	100	3 HOURS
5	21AATE408 21AATE409 21AATE410	E - Architectural Film Making E -Architectural Lighting E - Transit Oriented Development	PE	0-2-0	2	3	50	50	50	NA
			TOTAL	6-16-0	22	30	50	50	100	

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ISA: In-semester Assessment ESA: End Semester Assessment L: Lecture T: Tutorials P: Practical

Credit	Lecture Hours	Studio Hours	Practical Hours
1	1	1.5	2

Semester- IX ←

No	Code	Course	Category	L-T/S-P	Credits	Contact Hours	ISA	ESA	Total	Exam Duration (in hrs.)
1	21AATT501	Professional Training	PAEC	0-0-22	22	NA	20	80	100	NA
			Total	0-0-22	22	NA	20	80	100	

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ISA: In-semester Assessment ESA: End Semester Assessment L: Lecture T: Tutorials P: Practical

Credit	Lecture Hours	Studio Hours	Practical Hours
1	1	1.5	2

Semester- X

No	Code	Course	Category	L-T/S-P	Credits	Contact Hours	ISA	ESA	Total	Exam Duration (in hrs.)
1	21AATC501	Architectural Design – IX (Thesis Project)	PC	0-17-0	17	27	50	50	100	NA
2	21AATC502	Professional Practice - II	PC	3-0-0	3	6	50	50	100	3 HOURS
3	21AATE501 21AATE502 21AATE503	Elective V Documentation And Technical writing Architecture And Human Behavior Adobe Illustrator	PE	0-2-0	2	3	50	50	100	NA
			TOTAL	3-19-0	22	36	150	150	300	

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ISA: In-semester Assessment ESA: End Semester Assessment L: Lecture T: Tutorials P: Practical

Credit	Lecture Hours	Studio Hours	Practical Hours
1	1	1.5	2

Curriculum Content- Course wise

←BACK TO SEMESTER-I

Program : Architecture			
Course Title: ARCHITECTURAL DESIGN - I		**Course Code: 21AATC101**	**Teaching Hours**
L-S-P: 0-4-0	**Credits: 4**	**Contact Hours: 6**	
ISA : 50	**ESA: 50**	**Total Marks: 100**	
Teaching Hours: 84	**Examination Duration : NA**		
Course Overview: To familiarize the students with concepts of anthropometry and modular proportion and enable them to analyze the same for spatial design requirements along with study of analysis and application of vehicular data. Understanding and application of importance of space making elements in design. Proximity analysis, formation of concept, storyline and integration of form, function and volume in design			
UNIT I			
Introduction to Human proportions, Anthropometry and space standards Detailed study of spaces requirements with respect to single unit dwellings such as living, dining, bedrooms, kitchen, toilet etc. minimum standards for movements and vehicular data expression of design using the following. Spatial perception of spaces Study of anthropometrics Circulation Forms and integrity Space planning Architectural expression			**24**
UNIT II			
Introduction to Space making elements. Defining the core space making elements like wall, openings, column, floors, roofs, stairs etc. its usage and importance in designing spaces of various needs. Measuring and plotting existing buildings to understand element and its role in space creation.			**24**
UNIT III			
Designing a multi room space. Designing and organizing spaces of various purposes with respect to movement, circulation, furniture layout, aesthetical relation of traditions, culture etc. expression of creativity in form making The design issues to be addressed are Various basic human functions and their spatial implications Formulation of concepts Anthropometry and furniture layout Movement and circulation diagram Interior volumes and space articulation through different materials. Integration of form and function. Study models. The design projects could be, my dream house, guest house, farm house, tree house, cottage, etc.			**36**

Scheme for Internal semester assessment (ISA) The Portfolio covering the given topics and the study models shall be presented. The evaluation shall be through periodic internal reviews. The students have to present the entire semester work for assessment along with Models. Term work Evaluation of Portfolio, assignments by internal examiner
Scheme for End Semester Assessment (ESA) Term work: Evaluation of Portfolio and assignments by internal and external examiners/Viva
Mode of assessment : Portfolio, Models
Text Books: NIL
Reference Books: Ching, Francis DK, Architecture: Form, Space and Order, 2nd ed.Van Nostrand Reinhold, New York, 1999 Time savers standards Neufert Standards

Program: Architecture			
Course Title: Building construction & Materials-I		**Course Code: 21AATC102**	**Teaching Hours**
L-S-P: 0-4-0	**Credits: 4**	**Contact Hours: 6Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 84Hrs	**Examination Duration: NA**		
Course Overview: To equip students with the knowledge of basic construction systems, and building components materials used for construction and waterproofing for the components.			
Unit I			
Chapter 1: Introduction of construction systems: Introduction to Traditional, Contemporary and Futuristic style construction tools and techniques.			**10**
Chapter 2: Introduction to building components, Material convention and tools Introduction to building components and their functions in brief like foundations, plinth, coping, DPC, Floor, walls, lintel s, Doors and Windows, roof, Parapet and other components. Convention of construction material materials, like brick, blocks, stone, cement, wood, glass etc. Introduction to various tools commonly used for excavation, masonry and carpentry works.			**12**
Chapter 3: Introduction to Mortar and Brick Masonry. Types of mortar, its uses and properties of bonding materials like clay, lime, cement, gypsum etc. Sources and qualities of good sand and alternatives in preparing mortars. Types of bonds used in Brick masonry, for walls and pilasters with varying thicknesses. Construction of plinth for building with masonry walls using brick.			**22**
Unit II			
Chapter 4: Introduction to Stone Masonry. Classification of stones, types, properties and uses of stone for building. By-products of stone such as ballast, aggregate, graded crushed stone and powder (alternate to sand). Stone Masonry-Types of bonds used in stone masonry. Construction of plinth for building with masonry walls using brick.			**16**
Chapter 5: Lintels and Arches: Introduction to, types and functions for spanning openings in the building. Method of construction in bricks and stone masonry.			**12**
Unit III			
Chapter 6: Coping, DPC, Plastering, Guniting.: Introduction to coping and DPC in various building components. Plastering- Types, preparation and application in exterior and interior, like mud, lime, cement, and gypsum with different finishes. Guniting- To fill cracks, and voids in masonry and concrete.			**12**
Scheme for Internal semester assessment (ISA) Continuous evaluation of sheet submission and ISA along with models. Term work: Evaluation of Portfolio, assignments by the Internal examiner			

Scheme for End Semester Assessment (ESA) Term work: Evaluation of Portfolio, assignments by the External examiner	
Mode of assessment: Portfolio	
Text Books: Nil **Reference Books:** 1. McKay J.K Building Construction Metric Vol 1-4, 4thedi Orient Longman Pvt. Ltd, Mumbai,2002 2. "Construction Technology" Volume-I by R Chudley, ELBS & Longman group Ltd. 3. Barry R, "The construction of buildings" , Vol-2, 5th Edi, East West Press, New Delhi 1999. 4. Bindra S.P and Arora S.P, Building Construction-Planning Techniques and Method of Construction, 19thedi, Dhanpat Rai Pub ,NewDelhi, 2000 5. "Building Construction" by JanardhanJha, Khanna New-Delhi. 6. RangawalS.C,"Building Construction" 22nd Edi, charotar Publishing house, Anand, 2004 7. "Engineering Materials" by Surendra Singh, Vikas Delhi. 8. "Building Materials" by S K Duggal, IBH New Delhi. 9. Sushil Kumar T.B of Building Construction 19thedi, Standard Pub House, NewDelhi, 2003. 10. Chowdhary K.P. Engineering Materials used in India, 7th Edi, Oxford and IBH Pub ltd New Delhi, 1990. 11. Building Construction Handbook: By R Chudly& R Greeno, Bullerworth Heinemann, New-Delhi.	

←BACK TO SEMESTER-I

Program: I Semester- Bachelor of Architecture			
Course Title: GRAPHICS - I		**Course Code: 21AATC103**	**Teaching Hours**
L-S-P: 0-4-0	**Credits: 4**	**Contact Hours: 6Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 84 Hrs	**Examination: NA**		
UNIT I:			
1: Introduction to the basic principles of drawing Introduction to the basic principles of drawing, introduction to drawing equipments and their uses, sign conventions, Lettering and Dimensioning, Architectural Scale **2: Plane geometry –** Lines, Angles, Curves and regular Polygons Construction of triangles, quadrilaterals, curves and regular polygons **3: Solid Geometry – Points and Lines** Introduction to solid geometry, Orthographic projections of points and lines **4: Solid Geometry – Planes and Solids** Problems on Orthographic projections of planes and solids			**30 hrs**
UNIT II:			
5: Three Dimensional Representation – Oblique, Axonometric & Isometric Problems on Oblique, axonometric & Isometric projection of solids **6: Technical drawing** Simple floor plans, elevation, sections, of simple building.			**36 hrs**
UNIT III:			
7: Architectural Detailing Reading and representing building components details such as door frames fixing, chejja, plinth formation, steel joinery etc			**18 hrs**
Scheme for Internal semester assessment (ISA) Regular Assignments, models. Term work: Evaluation of Portfolio, assignments by internal examiner			
Scheme for End Semester Assessment (ESA) – Term work: Evaluation of Portfolio, assignments by internal and external examiners			
Mode of assessment : Portfolio			
Text Books: **1.** Bhat N.D. and Panchal V.M, Engineering Drawing, Plane and solid geometry, Charotar Publishing house, Anand 2002. **2.** Francis D.K. Ching, Architectural Graphics, 4th Edition, John Wiley & Son, New York			

←BACK TO SEMESTER-I

Program : Architecture			
Course Title: Skill Development Workshop- I		**Course Code: 21AATC104**	**Teaching Hours**
L-S-P: 0-2-0	**Credits: 2**	**Contact Hours: 3**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 42	**Examination Duration : NA**		
Course contents:			
Unit-I			
Free hand and objects drawing: Observation and recording through free hand drawing by using various drawing and sketching tools like pencil, pen, charcoal crayons etc. Architectural Model Making :Introduction to Basics of the Model making skills like cutting, pasting etc.			**16**
Unit-II			
Architectural sketching: Drawing of human figures, vehicles, small buildings, furniture, simple and complex geometrical objects with an emphasis on the perception of details and expressing them in lines, colour texture etc. Architectural Model Making: Introduction to Basics of the following associated skills to enhance and understand spatial, scale, material, and aesthetical requirements of design, construction and presentation.			**16**
Unit-III			
Painting: Understanding of colour wheel, components , types of colour, colour schemes, value and intensity by using painting tools and materials like brushes, paper, water color, poster colour etc.			**10**
Sessional Work (Internal semester assessment) Regular Assignments, Architectural sketches, drawings and models			
Scheme for Semester End Assessment (ESA) Term work: Evaluation of Portfolio, assignments by internal and external examiners			
Mode of assessment: Portfolio / Models.			
References: Book: **1.** Robert Gill: Rendering with pen & ink, Thames & Hudson New York 1984. **2.** Robert Gill: Basic Rendering, Thames & Hudson New York 1991. **3.** John Chen: Architecture in pen & ink, McGraw-Hill Inc- USA 1995. Colin Saxton: Art School, Chart well Books Inc. New Jersey.			

←BACK TO SEMESTER-I

Program: Architecture			
Course Title: Pre-Historic Architecture		**Course Code: 21AATC105**	**Teaching Hours**
L-S-P: 2-0-0	**Credits: 2**	**Contact Hours: 2 Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 28 Hrs	**Examination Duration: 3Hrs**		
Course Overview: To equip students with the knowledge of the evolution of various types of Architecture during the pre-historic era.			
Unit I			
Chapter 1: Primitive Man –Prehistoric world: Appreciate the life styles, technologies achievements of primitive man. Primitive man – Shelters, Settlements, religious and burial systems Ex: Oval Hut, Nive, Dolmen Tomb, Gallery Grave, Passage Grave, Houses at Catal Huyuk, Lepensiki Vir settlements, stone Henge			**10**
Unit II			
Chapter 2: River valley cultures-Indus Valley Civilization River valley cultures- Study of political systems, the concept of settlement, the impact of climate, socio-culture and their related shelter types, planning types, method of building structures and detailing. Study of building materials used. Indus valley civilization- The layout of Mohenjo-Daro, House Plans, Community well, Great Bath, Granary.			**06**
Chapter 3: River Valley Civilizations- Nile valley civilizations. Study of political systems, the concept of settlement, the impact of climate, socio-culture and their related shelter types, planning types, method of building structures and detailing. Study of building materials used. **Egyptian-** Tombs, Pyramids, & Temples- Mastaba Tombs, Pyramid of Cheops, Temple of Khons, Karnak			**04**
Unit III			
Chapter 4: River Valley Civilizations– Mesopotamian Civilization. Study of political systems, the concept of settlement, the impact of climate, socio-culture and their related shelter types, planning types, method of building structures and detailing. Study of building materials used. **Tigris and Euphrates** Ziggurats at Warka, Ur and Tchoga Zanbil, Palace of Sargon, Mastaba Tombs.			**08**
Scheme for Internal semester assessment (ISA) Two ISA exams will be scheduled and Assignment			
Scheme for End Semester Assessment (ESA) External examination-3 hrs			

Text Books: NIL **References**: **1.** "History of Architecture in India" by Fergusson Christopher. **2.** Sir Banister Fletcher's "History of Architecture	

Scheme for End Semester Assessment (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Chapter Number	Instructions
I	Q.No.-1, Q.No.-2, Q.No.-3	1, 2,3	Solve Any 2 out of 3
II	Q.No.-4, Q.NO – 5 Q.No.-6,	4, 5,6	Solve Any 2 out of 3
III	Q.No.-7, Q.No.-8	7,8	Solve Any 1 out of 2

←BACK TO SEMESTER-I

Program: Architecture			
Course Title: Basic Design		**Course Code: 21AATC106**	**Teaching Hours**
L-S-P:0-2-0	**Credits: 2**	**Contact Hours: 3 Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 42 Hrs	**Examination Duration: NIL**		
Unit I			
Chapter 1: Elements of Visual Composition. • Introduction on Elements of composition from micro to macro level existing in nature,2 dimension,3 dimension, paintings, collage, murals, sculptures and in building. • Understanding & applying Elements of visual compositions like Dots, Line, Planes, Shapes, forms ,spaces . • Understanding & applying Elements of visual compositions like Tone of Light, Color, Texture, Patterns, Solids or voids, Positive and negative spaces.			**16**
Unit II			
Chapter 2: Principles of Visual Composition. • Introduction on Principles of composition existing in nature. • Understanding & applying principles of composition like Repetition, Rhythm, Radiation, Focal point, Symmetry, Asymmetry, Axis, Datum, Harmony, Balance and Proportion.			**14**
Unit III			
Chapter 3: Exploration of Art forms. • Study of traditional and contemporary art forms. • Study of relation between Art and Architecture. • Study of relation between Ornamentation and Architecture			**12**

Scheme for Internal semester assessment (ISA)
ISA 1 & ISA 2- 20 marks
Sheets and models

Scheme for End Semester Assessment (ESA)
Portfolio submission.

Mode of assessment:
Sheets, Models and Portfolio submission.

Text books

1. NIL.

References :

1. Ching, Francis DK, Architecture: Form, Space and Order, 2nd editon.Van Nostrand Reinhold, New York, 1999
2. Elements of Space Making- Yatin Pandya
3. Design & Form—Johannes Itten
4. Marjore Elliott Bevin, ”Design through Discovery “,3rd edition by Holt Rinehart & Winton,Newyork,1977.
5. George A Convington& Bruce Hannah”Access by Design”Van Nostrand Reinhold 1996.
6. Robert Gill—Rendering with Pen & Ink Thames & Hudson New York 1991.
7. WuciusMulick,Principles of 2 Dimensional Design

8. Milind Mulick ,sketch book

←BACK TO SEMESTER-I

Program: Architecture			
Course Title: Structures-I		**Course Code: 21AATC107**	**Teaching Hours**
L-S-P: 3-0-0	**Credits: 3**	**Contact Hours: 3**	
ISA: 50	**ESA: 50**	**Total Marks: 100**	
Teaching Hours: 42	**Examination Duration: 3 Hours.**		

Unit - 1	
Chapter No. 01. Introduction Introduction to structures, structural system and structural elements. Forces acting on the building structures.	**8 hrs**
Chapter No. 02. Centroid and Moment of Inertia Definition, compare with centre of gravity, location od centroid by first principle. location of centroid for symmetric and asymmetric solid and hallow laminas. Definition of moment of inertia. Parallel and perpendicular axes theorems. MI by first principle. Obtaining MI of symmetrical and asymmetrical sections. radius of gyration and its significance.	**6 hrs**
Chapter No. 03. Force and force system Force, characteristics of a force, Law of transmissibility of force, force system, resultant, equilibrium of noncurrent coplanar force system. Connected concurrent bodies	**6 hrs**
Unit - 2	
Chapter No. 04. Support Reactions Moment of a force, couple and its characteristics, types of supports, types of beams and loadings. conditions of equilibrium of coplanar force system. To determine the support reactions for cantilever, simply supported and over hanging beams.	**6 hrs**
Chapter No. 05. Stress/strain relations Material response to applied loads, intensity of stress, strain and types. Stress strain diagrams for major building materials, Modulus of Elasticity, composite sections, lateral strain poission's ratio and volumetric strain.	**8 hrs**
Unit - 3	
Chapter No. 06. Analysis of pin jointed frames Truss concept of triangulation, common truss configurations, innovative forms for truss of given span. Assumptions and classification, analysis of pin jointed frames.	**8 hrs**

Scheme for Internal semester assessment (ISA)
Assignments, ISA 1,ISA 2

Scheme for End Semester Assessment (ESA)
ESA theory exams

Mode of assessment
Theory exams

Text Books:

1. Egg Mechanics by S.S.Bhavikatti III-edition .Vikas publications New Delhi.

Reference Books:

1. Daniel L Schodek, Structures, PHI Learning Private limited, 2014
2. S S Bhavikatti, Engineering mechanics, 2015, Vikas publication, 2015

Scheme for Semester End Examination (ESA)

UNIT	8 Questions to be set of 20 Marks Each	Unit numbers	Instructions
I	Q.No.-1, Q.No.-2, Q.No.-3	I	Solve Any 2 out of 3
II	Q.No.-4, Q.NO – 5 Q.No.-6,	II	Solve Any 2 out of 3
III	Q.No.-7, Q.No.-8	III	Solve Any 1 out of 2

←BACK TO SEMESTER-I

II SEMESTER

Program: Architecture			
Course Title: Architectural Design II		**Course Code: 21AATC108**	**Teaching Hours**
L-S-P: 0-4-0	**Credits: 4**	**Contact Hours: 6Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 84Hrs	**Examination Duration: NA**		
Course Overview: To familiarize the student with the process of design through application of knowledge of anthropometry, space making elements, spatial design standards and architectural composition and also to help them analyze and infer from case study. To understand the development of concept to design as well as make technically correct drawings and develop visualization skills in two and three dimensions.			
UNIT I:			
1. Introduction to Design theory 2. Principles of architectural composition: 3. General principles like unity, Balance, Proportion, Scale, Contrast, Harmony, Accentuation, and Restraint. Repose, Vitality, Strength in the built environment 4. Underlying Ordering Principles Symmetry, hierarchy, datum, axis, scale and proportion rhythm in the built environment.			**24**
UNIT II:			
1. Introduction Multiuser/ public spaces 2. Defining and understanding various design aspects needed for multi /semipublic/public user spaces.			**24**
UNIT III:			
1. Designing a multi user multi-level room space. 2. To develop skills for comprehensive understanding and dealing with Architecture Provide skills for designing multi-user and multi-level spaces. 3. The design issues to be addressed are I. Multi user and multi-level space formation II. Integration of material and form. III. Integrate the horizontal and vertical circulation. IV. Develop skills to correlate the materials V. Details pertaining to the disabled, aged people and children. The tentative list of suggested projects to be covered as design problems: Architectural Exhibition / display spaces Multi level museum, academic spaces, kindergarten school, Recreational spaces fast food/ restaurant			**36**
Scheme for Internal semester assessment (ISA) The Portfolio covering the given topics and the study models shall be presented. The evaluation shall be through periodic internal reviews. The students have to present the entire semester work for assessment along with Models. Term work Evaluation of Portfolio, assignments by internal examiner			
Scheme for End Semester Assessment (ESA) Term work: Evaluation of Portfolio and assignments by internal and external examiners/Viva			

Mode of assessment:
Portfolio, Models

Reference Books:

1. Francis DK, Architecture: Form, Space and Order, 2nd ed.Van Nostrand Reinhold, New York 1999
2. Neufert Architects Data
3. Time Savers standards
4. Pandya Yatin 2003, Elements of Space making
5. White, Edward .T. Diagramming information for Architectural Design.
6. Makstutis Geoffrey 2018 Design Process in Architecture

RETURN TO SEM II

Program: Architecture			
Course Title: Building construction & Materials-II		**Course Code: 21AATC109**	**Teaching Hours**
L-S-P: 0-4-0	**Credits: 4**	**Contact Hours: 6Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 84Hrs	**Examination Duration: NA**		
Course Overview: To equip students with the knowledge of timber, types of timber bi-products of timber. Application of timber in building components such as doors, and windows. Introduction of concrete technology. Study of cladding facades and study of scaffolding and formwork.			
Unit I			
Chapter 1: Timber: Introduction to timber and its varied application in Architecture. Study theprocess of selection, size,and defects in timber.			**14**
Chapter 2: Introduction to bi-products of timber. Introduction to the uses and application of various bi-products of timber such as plywood, veneers, laminates etc.			**14**
Chapter 3: Joinery in Timber. Introduction to joinery in timber which are vastly applied in Architectural use that is in carpentry work ex:- Doors, windows etc.			**14**
Unit II			
Chapter 4: Concrete Technology Introduction to concrete technology its types and its vast application in the construction industry.			**14**
Chapter 5: Introduction to formwork and scaffolding and cladding: Introduction to the need for formwork and scaffolding its types, methods of erecting. Introduction to cladding, its purpose, needs, maintenance of cladding.			**14**
Unit III			
Chapter 6: Materials and Construction joints. Study of admixtures, water proofing, damp proofing in building systems. Study, necessity and construction details of joint and expansion joints.			**14**
Scheme for Internal semester assessment (ISA) Continuous evaluation of sheet submission and ISA along with models. Term work: Evaluation of Portfolio, assignments by the Internal examiner			
Scheme for End Semester Assessment (ESA) Term work: Evaluation of Portfolio, assignments by the External examiner			
Mode of assessment: Portfolio			

Text Books: Nil

Reference Books:

1. McKay J.K Building Construction Metric Vol 1-4, 4thedi Orient Longman Pvt. Ltd, Mumbai,2002
2. “Construction Technology” Volume-I by R Chudley, ELBS & Longman group Ltd.
3. Barry R, “The construction of buildings” , Vol-2, 5th Edi, East West Press, New Delhi 1999.
4. Bindra S.P and Arora S.P, Building Construction-Planning Techniques and Method of Construction, 19thedi, Dhanpat Rai Pub ,NewDelhi, 2000
5. “Building Construction” by JanardhanJha, Khanna New-Delhi.
6. RangawalS.C,“Building Construction” 22nd Edi, charotar Publishing house, Anand, 2004
7. “Engineering Materials” by Surendra Singh, Vikas Delhi.
8. “Building Materials” by S K Duggal, IBH New Delhi.
9. Sushil Kumar T.B of Building Construction 19thedi, Standard Pub House, NewDelhi, 2003.
10. Chowdhary K.P. Engineering Materials used in India, 7th Edi, Oxford and IBH Pub ltd New Delhi, 1990.
11. Building Construction Handbook : By R Chudly& R Greeno, Bullerworth Heinemann, New-Delhi.

RETURN TO SEM II

Program: Architecture			
Course Title: Graphics II		**Course Code: 21AATC110**	**Teaching Hours**
L-S-P: 0-3-0	**Credits: 3**	**Contact Hours: 5 Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 70 Hrs	**Examination: NA**		

Course Overview:
The course aims to equip the student with the skills of Architectural technical drawing and graphical standards and representation used as a standard in the profession. The students are expected to be well versed with the basic knowledge of solid objects and Geometry. After completion of the course students will be able to Visualize the simple and complex object when sectioned and represent the same through orthographic drawing. Explain resultant effects of picture plane, station point, vanishing point, eye level, ground level etc. Draw perspective view of building exterior and interior including rendering. Identify basic principles of sciography and its application to the field of architecture.

Unit I	
Chapter No. 1. Section of objects Exercise on drawing orthographic projections, of the simple and composite geometrical objects when sectioned.	**10**
Chapter No. 2. Perspective elements and their resultant effect Drawing exercise on study of perspective elements and their resultant effects on perspective view.	**14**
Chapter No. 3. Drawing perspective view Exercise on drawing perspective view, by office and measuring point method for, simple and composite geometrical objects, from orthogonal drawings	**12**
Unit II	
Chapter No. 4. Drawing perspective view of building interior and exterior Exercise on drawing perspective view of simple buildings and interior from orthogonal drawings.	**10**
Chapter No. 5. Study of shades and shadows. Exercises to show the shades and shadows of the object and building, on itself, on ground and / or elevation.	**12**
Unit III	
Chapter No. 6. Rendering techniques Representing building and landscape materials using various media and techniques on plans, elevations and views for architectural presentation drawings.	**06**
Chapter No. 7. Rendering on perspective view. Rendering on perspective view drawings of interior and exterior of buildings by using appropriate media and techniques.	**06**
Scheme for Internal semester assessment (ISA): ISA-I 20 marks ISA-II 20 marks Portfolio – 10 marks Intermediate Portfolio submission and Test.	
Scheme for End Semester Assessment (ESA): Term work: Complete Portfolio Submission.	
Mode of assessment: Final Portfolio and minor tests	

References:

1. Shah Patki Kale, Perspective Drawing
2. I H Morris, Geometric Drawing for Art students
3. Prof. VeeEss, Engineering Drawing., 1990
4. Basic Perspective, Robert Gill
5. S H Mullik, Perspective and Sciography
6. John Pile, Perspective for Interior Designers
7. John Holmes, Applied Perspective
8. Shah, Kale, Patki, Building Drawing

RETURN TO SEM II

Program: Architecture			
Course Title: HISTORY OF ARCHITECTURE - I		**Course Code:21AATC111**	**Teaching Hours**
L-S-P: 2-0-0	**Credits: 2**	**Contact Hours: 2Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 28 Hrs	**Examination: 3hrs**		

Course Overview:
Understanding classical and roman architecture through Romanesque architecture through study of built forms and open space.

UNIT I	
Pre-Classical Architecture – Persian, Mycenaean, Etruscan Characteristics, The Palace of Persepolis, Tholos tombs , Lions gate, Architectural Characteristics, The Palace Tiryns, The Temple of Juno Sospita, Lanuvium. **Greek Architecture** Characteristics, Orders of Greek, The Acropolis: Athens, Parthenon, Theatres and Temples	**10 hrs**
UNIT II:	
Roman Architecture Characteristics, Orders, Colosseum, Pantheon, Forums, Temples, Theatres, Amphitheaters, and Aqueducts **Early Christian Architecture & Byzantine Architecture** Characteristics, Basilica churches, St Peter's Church Rome, Evolution of Byzantine Churches, Hagia Sophia	**10hrs**
UNIT III:	
Romanesque Architecture New Construction Methods, Pisa Cathedral, The Abbey Church, Cluny **Gothic Architecture** Cathedrals, Gothic Churches with construction of pointed arch, Rose windows, etc	**8 hrs**

Scheme for Internal semester assessment (ISA)
Regular Assignments and ISA Tests

Scheme for End Semester Assessment (ESA)
External examination-3 hrs

Mode of assessment:
Portfolio& Theory Exam.

Textbooks: NIL

Reference Books:
Sir Banister Fletcher - History of Architecture

F.D K Ching, Mark Jarzombek and Vikram Aditya Prakash – A Global History of Architecture

Scheme for Semester End Examination (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Chapter Number	Instructions
I	Q.No.-1, Q.No.-2, Q.No.-3	1,2,3,4,5	Solve Any 2 out of 3
II	Q.No.-4, Q.NO – 5 Q.No.-6,	6,7,8,9	Solve Any 2 out of 3
III	Q.No.-7, Q.No.-8	10,11	Solve Any 1 out of 2

RETURN TO SEM II

Program : Bachelor of Architecture			
Course Title: Skill Development - II		**Course Code:21AATC112**	**Teaching Hours**
L-S-P : 0-2-0	**Credits: 2**	**Contact Hours: 05**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 80	**Examination Duration: NA**		
Course Overview - The course is designed to equip students with the fundamental concepts and practical skills necessary for building design process and assessment. As the architectural industry majorly depends on these digital essential skill sets, which can enable the student to come up with quick professional solutions. This course provides the comprehensive understanding of professional Digital skills which an Architect should posses			
UNIT I			
Hands-on working of advance model making and working tools. Various types of materials used for making scaled models, sculpting etc. (Any 3 - Paper, card sheet, mount board, clay, wax, glass, etc.) Methods of cutting, joining, texture development.			**20**
Hands on Sketching and Rendering on Streetscape and Public space. Introduction to Autodesk Sketch Book Software for Architectural Digital Sketches.			**20**
UNIT II			
Hands on Sketching and Rendering on Streetscape and Public space. Introduction to Autodesk Sketch Book Software for Architectural Digital Sketches			**20**
UNIT III			
Architectural Vector Drawings using Adobe Illustrator Software.			**20**
Scheme for Internal semester assessment (ISA) Regular Assignments drafting of sheets, rendered sheets, models and photos			
Scheme for End Semester Assessment (ESA) **Term work:** Evaluation of Portfolio, assignments by internal and external examiners			
Mode of assessment: Portfolio			
Text Books : NIL			
Reference Books : Reference Books: References : Robert Gill : Rendering with pen & ink , Thames & Hudson New York 1984 Robert Gill : Basic Rendering ,Thames & Hudson New York 1991 John Chen : Architecture in pen & ink, McGraw-Hill Inc- USA 1995 Colin Saxton : Art School, Chartwell Books Inc New Jersy.			

Program: Architecture			
Course Title: Digital Tool –I (CAD)		**Course Code: 21AATP102**	**Teaching Hours**
L-S-P: 0-0-2	**Credits: 2**	**Contact Hours: 4**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours:56	**Examination Duration: NA**		
UNIT I:			
Introduction to CAD Environment: Introduction to The world space, user co-ordinate system (ucs). Command line and menus, to learn basic commands like, units, limits, line, circle, arc. Etc. Use editing commands like trim, extend, erase, and offset to create basic shapes.			**20 Hrs**
UNIT II:			
2D Drafting: Use basic drawing and editing commands to create 2d architectural plans, elevations, and sections, adding text and dimensions creating layers using advance editing commands.			**24 Hrs**
UNIT III:			
Composing and printing: Creating detail sanction drawings, using plot for output, saving drawings in different file formats. Creating 2d drawings from Google earth and importing images in cad.			**12 Hrs**
Sessional Work (Internal semester assessment) Students will be assessed by 2 theory minor exams of 15 marks each and 20 marks for portfolio submission.			
Scheme for Semester End Assessment (ESA) Evaluation of Assignments in form of soft copy & hard copy worked during the course by internal and external examiners.			
Mode of assessment : Portfolio.			

References :

1. AutoCAD 2007 for Dummies. By David Byrnes, Mark Middle brook.
2. Publisher: For Dummies; Revised edition (May 8, 2006)
3. ISBN-10: 0471786497, ISBN-13: 978-0471786498
4. 2.)Enhancing CAD Drawings with Photoshop by Scott On Stott
5. Publisher: Sybex (January 21, 2005) Language: English
6. ISBN-10: 0782143865 ISBN-13: 978-0782143867

RETURN TO SEM II

Program: Architecture			
Course Title: Structures-II		**Course Code: 21AATC114**	**Teaching Hours**
L-S-P: 3-0-0	**Credits: 3**	**Contact Hours: 3 Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 42Hrs	**Examination Duration: 3Hrs**		
Unit I			
Chapter No. 01 Shear force and Bending moment Difference between determinate and indeterminate structures, Shear force and bending moment, construction on shear force diagram and bending moment diagrams for the cantilever, simply supported and over hanging beams subjected udl and concentrated loads			**9**
Chapter No. 02. Bending Stresses in beams Concept of simple bending, Bending equation, section modulus, bending stress distribution in symmetrical and un symmetrical sections. Bending stress distribution diagram.			**8**
Unit II			
Chapter No. 03. Shear Stresses in beams Shear stresses in beams shear stress equation, relation between maximum and average shear stress in rectangular section, shear stress distribution in symmetrical and un symmetrical sections. Shear stress distribution diagrams.			**7**
Chapter No.04. Deflection of beams Deflection of beams, Deflection equation, obtaining expressions for cantilever and simply supported beams subjected to udl or concentrated load by double integration method for stranded cases. Flexural rigidity. Macaulay's method, slope and deflection of simply supported beams subjected to concentrated load and udl.			10
Unit III			
Chapter No. 05. Columns and struts Short and long columns, buckling of column, boundary conditions for columns, effective length, slenderness ratio and critical load. Euler's and Rankine's theories			8
Scheme for Internal semester assessment (ISA) Assignments, ISA 1,ISA 2			
Scheme for End Semester Assessment (ESA) ESA theory exams			
Mode of assessment Theory exams			
References: 1. Structures - Martin Bechthold, Daniel L Schodek, and PHI Learning Private limited, Sixth Edition 2. Structure in Architecture, the building of buildings, by Mario Salvadori 3. Structure and Design, by G. G. Schierle 4. Engg Mechanics – R K Bansal & Sanjay Bansal, Laxmi publications, New Delhi.			

Scheme for Semester End Examination (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Chapter Number	Instructions
I	Q.No.-1, Q.No.-2, Q.No.-3	1,2,3,4,5	Solve Any **2** out of **3**
II	Q.No.-4, Q.NO – 5 Q.No.-6,	6,7,8,9	Solve Any **2** out of **3**
III	Q.No.-7, Q.No.-8	10,11	Solve Any **1** out of **2**

RETURN TO SEM II

Program : Architecture			
Course Title: Surveying		**Course Code: 21AATP101**	**Teaching Hours**
L-S-P: 2-0-0	**Credits: 02**	**Contact Hours: 02**	
CIE Marks: 50	**SEE Marks: 50**	**Total Marks: 100**	
Teaching Hours: 42	**Examination Duration: 3 Hours**		
UNIT I			
Surveying- definition, scope of surveying, applications of surveying in architecture projects, principles, classification and character of work. Shrunken scale. Direct and reciprocal ranging, offsets types. Basic problems in chaining, well- conditioned triangle and chain triangulation. Errors in chain surveying. **Principles of plane table surveying,** accessories and methods of plain tabling. Merits and demerits of plane table survey as compared to chain survey.			**18**
UNIT II			
Leveling, terms used, instruments, classification of leveling, Temporary adjustments of dumpy level. Plane of collimation and rise and fall methods. Booking and reduction of levels related numerical on the topics. And errors in leveling. **Introduction to contouring,** definitions contour interval, factors affecting contour interval. Characteristics of contours, location of contours, direct and indirect methods of contouring, interpolation of contours. Application of contour maps in architecture field.			**16**
UNIT III			
Introduction to Theodolite temporary adjustments and field work. Introduction to Geographical Information systems and Total station.			**08**
Scheme for Internal semester assessment (ISA) Regular Assignments and ISA Exams			
Scheme for End Semester Assessment (ESA) External examination-3 hrs.			
Mode of assessment: Portfolio & Theory Exam.			
Text Books: 1. B.C. Punmia, Surveying and Levelling, Vol-I Chirator Publications. 2. Kanetkar T. P. and Kulkarni S.V, Surveying and Levelling Part-I			
Reference Books: 1. Duggal, Surveying and Levelling. Vol-I			

Scheme for Semester End Examination (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Chapter Number	Instructions
I	Q.No.-1, Q.No.-2, Q.No.-3	1,2,3,4,5	Solve Any **2** out of **3**
II	Q.No.-4, Q.NO – 5 Q.No.-6,	6,7,8,9	Solve Any **2** out of **3**
III	Q.No.-7, Q.No.-8	10,11	Solve Any **1** out of **2**

RETURN TO SEM II

III- SEMESTER

Program : Architecture			
Course Title: ARCHITECTURAL DESIGN – III		**Course Code: 21AATC201**	**Teaching Hours**
L-S-P: 0-6-0	**Credits: 6**	**Contact Hours: 9**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 126	**Examination Duration: NA**		
Course contents:			
Course overview To create a holistic understanding of the socio-cultural, geographic and economic aspects that shape the built environment as well as to expose the students towards the design of simple community oriented buildings. To make a comprehensive study of a rural settlement that is an exemplar of collective design evolved organically over a period of time. To expose the students on the methodology of conducting various surveys covering, physical, visual characteristics and demographic aspects. To understand the vernacular / traditional architecture involving local materials and construction techniques. To emphasis on the importance of designing built form and open spaces that meet the aspirations of the community.			
Unit I			
Chapter No. 1. Pre-design phase Student's ability to understand the concept of community and settlement evolution and the built environment as influenced by Socio-economic, Cultural, Environmental and Technical factors Literature study: understand the nature of the project through literature study, Book review: genus loci, meaning in built environment, etc Live case studies: to experience the spaces, understand space planning, scale, volumes, proportions, structures, construction, materials etc. Preparing the design program/ narratives			20hrs
Chapter No. 2. Schematic design phase Documentation of settlement through historical background, demographics, data collection , preparations of maps, architectural documentation drawings, visual documentation through photography and sketches Analysis of the collected data, understanding the evolution pattern of the settlement, generation architectural typologies based on architectural characteristics, construction techniques and materials used, understanding various issues at settlement and infrastructure level Conceptualizing the design: Story line, Creative exercise: design diagrams, models, Finalizing the schema/concept			24hrs
Unit II			
Chapter No. 3. Design development stage I Form development, envelope, structure and services, (through sketches and models) Space planning Overlapping the layers of functional, circulation, design principles, space experience, water supply and sanitation, electrical and illumination, climatic response, structural, etc			54hrs
Chapter No. 4. Design development stage II Development of site plan, site section and site elevations Development of plan section and elevations			14hrs
Unit III			
Chapter No. 5. Final presentation drawings Preparation of final presentation drawings, views, sketches.			14hrs
Scheme for Internal semester assessment (ISA) Regular assignments, Models, Reviews. Term work: Evaluation of Portfolio and assignments by internal examiner.			
Scheme for End Semester Assessment (ESA) Term work: Evaluation of Portfolio and assignments by internal and external examiners/Viva			
Mode of assessment: Portfolio, Physical models, manual hand drafted drawings.			

Text Books: NIL	
Reference Books: 1. Time Saver Standard for Architectural Data by John Hancock. 2. Architectural Graphic Standards by Ramsey and Sleeper. 3. Magazines and Design related books 4. Architecture: Form, Space and Order, Ching, Francis DK **5.** Design and Form: The basic course at the Bauhaus, Itten, Johannes**.** 6. Elements of space forming, Yatin Pandya. 7. Architectural Composition, Krier, Rob	

RETURN TO SEM III

Program: Bachelor of Architecture			
Course Title: Building construction & Materials-III		**Course Code: 21AATC202**	**Teaching Hours**
L-S-P: 0-4-0	**Credits: 4**	**Contact Hours: 6Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 84Hrs	**Examination Duration: NA**		
Course Overview: To familiarize the students with various types of Architectural openings which might be small & Large openings, types of roofing and floor finishes, and also introduce them to sustainable construction techniques.			
Unit I			
Chapter 1: Doors, windows and ventilators for small openings: The study of various types of architectural components used for openings such as Frames, shutters, safety grills, hardware, fabrication and installation. Study of materials used for the components such as timber, steel etc			**08**
Chapter 2: Doors The study of different types of doors such as panelled, flush, single a multi-leaf, glazed, safety doors, sliding, UPVC, fiber doors, special doors for the health sector, finance sector, entertainment industry etc.			**12**
Chapter 3: Windows The study of conventional, bay windows, casement windows, clearstory etc. The windows which are the openable, sliding, louvered type.			**12**
Unit II			
Chapter 4: Doors, Windows and ventilators for large and special openings. The study of different types of geometry of openings, fabrication, installation and maintenance of the openings. Doors openings which are wide such as rolling shutters, sliding doors, collapsible gates, folding doors, single and multi-leaf shutters, safety doors etc.			**20**
Unit III			
Chapter 5: Roofing for buildings: The study of types, materials, usage, fabrication, erection and maintenance of roofs. The roof types are sloping, gabled and lean-to roofs. The materials used for roofing's being Tin sheets, tiled and shingle roofs for special usage.			**6**
Chapter 7: Sustainable construction techniques:			**6**

A brief introduction to sustainable construction techniques put in practice in the construction industry.	
Scheme for Internal semester assessment (ISA) Continuous evaluation of sheet submission and ISA along with models. Term work: Evaluation of Portfolio, assignments by the Internal examiner	
Mode of assessment: Portfolio	
Text Books: NIL	

Reference Books:

12. McKay J.K Building Construction Metric Vol 1-4, 4thedi Orient Longman Pvt. Ltd, Mumbai,2002
13. "Construction Technology" Volume-I by R Chudley, ELBS & Longman group Ltd.
14. Barry R, "The construction of buildings" , Vol-2, 5th Edi, East West Press, New Delhi 1999.
15. Bindra S.P and Arora S.P, Building Construction-Planning Techniques and Method of Construction, 19thedi, Dhanpat Rai Pub ,NewDelhi, 2000
16. "Building Construction" by Janardhan Jha, Khanna New-Delhi.
17. RangawalS.C,"Building Construction" 22nd Edi, charotar Publishing house, Anand, 2004
18. "Engineering Materials" by Surendra Singh, Vikas Delhi.
19. "Building Materials" by S K Duggal, IBH New Delhi.
20. Sushil Kumar T.B of Building Construction 19thedi, Standard Pub House, NewDelhi, 2003.
21. Chowdhary K.P. Engineering Materials used in India, 7th Edi, Oxford and IBH Pub ltd New Delhi, 1990.
22. Building Construction Hand book : By R Chudly& R Greeno, Bullerworth Heinemann, New-Delhi.

RETURN TO SEM III

Program: Bachelor of Architecture			
Course Title: SERVICES – I(WATER SUPPLY & SANITATION)		**Code: 21AATC203**	**Teaching Hours**
L-S-P: 2-0-0	**Credits: 2**	**Contact Hours: 2**	
ISA Marks:50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 28	**Examination Duration: 3HOURS**		
UNIT I			
Chapter 1: Sources and purification of water Surface and underground sources of water supply, pollution and preventive measures. **Chapter 2: Domestic water supply** Water requirement for different types of buildings, pipes, valves, wash basins, sink, bath tubs, flushing cisterns, showers, jets, faucets. Cold and hot water supply for ground and multi-storied buildings. Provision for firefighting, solar heating systems, geysers.			**12**
UNIT II			
Chapter 3: Sanitation Importance of sanitation, definitions, types of refuse, collection and disposal systems. Rural sanitation. Types of fixtures and materials. Sanitary requirements for various types of buildings. **Chapter** 4: Drainage systems Principles, location of sanitary units, separate and combined systems, septic tanks, aqua privy. Drainage system for ground and multistoried buildings including. storm water drainage, rain water harvesting. Preparing plumbing Drawings			**10**
UNIT III			
Chapter 5: Recycling Sewage pumping stations, waste water treatment, oxidation. Recycling of sewage water. **Chapter 6**: Site planning Roads and pavements, drainage of roads, drainage on sloping sites, sub soil drainage. Site planning from drainage and water supply point of view.			**6**
Scheme for Internal semester assessment (ISA) Regular Assignments.			
Scheme for End Semester Assessment (ESA) External examination-3 hrs.			
Mode of assessment: Portfolio& Theory Exam.			
Text Books: NIL			

Reference Books:

1. Husain, S. K. T. B. of water Supply and Sanitary Engineering, 3rd ed. Oxford and IBH Pub. Ltd. New Delhi, 1994.
2. Kshirsagar,S.R. Water Supply Engineering, 6th ed. Roorkee Pub, Roorkee, 1980.
3. Rangawala, S.C. Water Supply and Sanitary Engineering; Envirornmental Engineering, 19th ed. Charotar Pub. House, Anand, 2004.
4. S.C. Rangawala, fundamentals of water supply and sanitary engineering. Charotar Pub. House, Anand,
5. Iussain S. K. water supply and sanitary engineering, Dhanapat Rai and Sons, Delhi Relevant I.S. Codes
6. Basic Plumbing techniques, Orthobooks, Chevron Chemical Company, Consumer products Div., Box 5047, San Ramon, CA 94583
7. G.M. Fair, J.C. Geyer and D.A. Oku, Water and Waste Water Enineering, vol.II, John Wiley and Sons, Inc. New York, 1968
8. Manual of water Supply and Treatment, 2nd edition, CPHEEO, Ministry of works and HOUSING New DELHI, 1980
9. Manual ON sewage Treatment , CPHEEO, Ministry of works And HOUSING New DELHI , 1977

Scheme for End Semester Assessment (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Chapter Number	Instructions
I	Q.No.-1, Q.No.-2,	1, 2	Solve Any **1** out of **2**
II	Q.No.-3, Q.NO – 4,	3, 4	Solve Any **1** out of **2**
III	Q.No.-5, Q.No.-6	4,5	Solve Any **1** out of **2**

RETURN TO SEM III

Program: Bachelor of Architecture			
Course Title: CLIMATOLOGY		**Course Code: 21AATC204**	**Teaching Hours**
L-S-P: 2-0-0	**Credits: 2**	**Contact Hours: 2**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 28	**Examination Duration: 3hrs**		

UNIT I	
Introduction – Elements of Climate, Enumerating and representing climatic data. Classification of Climate, major Climatic Zones of the World, tropical Climate Further Classification. Climatic Zones of India, Classifications, case study of one city within each Zone.	**12**
UNIT II	
Thermal Comfort, effect of Climatic Elements on thermal Comfort, Heat Exchange Process, Effective Temperature. Natural Ventilation, effect of openings in internal and external features, Design Considerations etc. Effect of Landscape elements and site topography, reading climate data, climate analysis and data validation through climate consultant software.	**10**
UNIT III	
Bioclimatic chart, Design Consideration for various climatic zones of INDIA, with respect to Shading devices, Day Lighting Factors, Components of day light factor and its design considerations, Rainfall considerations etc. Construction Techniques for Improving Thermal Performance of Walls and roofs at various climatic Zones in India. Climate data representation through flow design and ecotect software. Design project of not more than 500sqm. built up incorporating all the components of climate responsive architecture.	**6**
Scheme for Internal semester assessment (ISA) Regular Assignments, Architectural models, rendered sheets and photos	
Scheme for End Semester Assessment (ESA) External examination-3 hrs	
Mode of assessment: Portfolio& Theory Exam.	
Reference Books : NIL	
Textbooks: 1. Arvind Kishan , Baker & Szokolay, Climate Responsive Architecture. 2. Manual of Tropical Housing & Buildings (PartII)" Koenigsberger. 3. Buildings in the tropics by Maxwell Fry **4.** Housing , Climate and Comfort by Martin Evans	

Scheme for End Semester Assessment (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Chapter Number	Instructions
I	Q.No.-1, Q.No.-2,	1, 2	Solve Any **1** out of **2**
II	Q.No.-3, Q.NO – 4,	3, 4	Solve Any **1** out of **2**
III	Q.No.-5, Q.No.-6	4,5	Solve Any **1** out of **2**

RETURN TO SEM III

Program: Bachelor of Architecture			Teaching Hours
Course Title: HISTORY OF ARCHITECTURE - II		Code: 21AATC205	
L-S-P: 2-0-0	Credits: 2	Contact. Hours: 2Hrs/week	
ISA Marks: 50	ESA Marks: 50	Total Marks: 100	
Teaching Hours: 28Hrs	Examination Duration: 3Hrs		

Course Overview: It deals with the evolution of Architecture and Buildings from Rock cut caves to structural temples that have its roots in the religious and socio-cultural practices of various empires and dynasties. To expose the students to the styles that emerged, in their forms, construction technique, and planning principles.

Unit I	
Chapter 1: Rock- cut caves (2 B.C.E to 6 C.E) Evolution and introduction to Early rock-cut cave examples: Ajanta caves (2 B.C.E to 480 C.E), Karli caves (2nd B.C), Udayagiri and Khandagiri Hills (Jain rock cut caves 1st B.C.E), Ellora caves (600 to 1000 C.E) Badami cave temples (6th C.E) and other important examples.	04
Chapter 2: Evolution of Structural temples (2 B.C.E to 6 C.E) Evolution, introduction and characteristic features of Early structural temples in North India-Temples at Besnagar (3 to 2 B.C.E)and Nagari (1 B.C.E), Temples at Tigawa, Bhitargaon,	04
Chapter 3: Introduction and Evolution of Buddhist Architecture (185 B.C.E – 600 C.E) Architectural Characteristic features of Buddhist Architecture, Sanchi stupa 1st B.C.E , and other important Buddhist sites.	04
Chapter 4: Early Chalukyan Architecture, Aihole (450-650 C.E) Pattadkal (600-750 C.E) Introduction, Architectural characteristics, various architectural styles evolved during the period with architectural examples like Ladhkhan Temple, Aihole,450 C.E and Durga temple, Aihole, 550 C.E Pattadkal temples: Introduction, Papanath temple, Pattadkal (680 C.E) and Virupaksha temple, Pattadkal (740 C.E)	04
Unit II	
Chapter 4:Dravidian Architecture: Introduction , evolution, architectural styles and emerging of new styles evolved during the period under different dynasties with architectural examples **Under Pallavas (600-900 C.E) :** Rock cut Examples : Rock cut Mandapas,650 C.E, Rathas , 650 C.E Structural Examples : Shore temple at Mamallapuram, 700C.E **Under Cholas (900-1150 C.E) :** Brihadeswara temple,Tanjore,1010 C.E Temple of GangaikondaCholapuram, 1033 C.E **Under Pandyas (1100-1350 C.E) :** Evolution of Gopuram **Under Rayalas, Hampi** Vijayanagar (1350-1565 C.E) :(Later Dravidian temples) Architecture Characters Vittala temple, Hampi Vijayanagar 16th C.E Hazara Rama temple, Hampi Vijayanagar 16th C.E **Under Nayaks,** Madurai (1600 C.E) : :(Later Dravidian temples)	06
Unit III	
Chapter 5: Introduction to Indo Aryan Architecture Orissan Architecture (800 -1250 C.E) Architectural characters and precinct of Orissan temple architecture Khajuraho Architecture (950 -1050 C.E)Architectural characters and examples :Kandaria Mahadev temple,1000 C.E	04
Chapter 6: Later Chalukyan or Hoysala Architecture (1050- 1300 C.E) Architectural characters Chennakesavatemple,Belur 1117 C.E, Hoysaleswara temple Halebid 1150 C.E and Kesava temple Somnathpur 1268 C.E	02

Scheme for Internal semester assessment (ISA) ISA -1 & ISA-2 - 20 marks Assignment : 10 marks	
Scheme for End Semester Assessment (ESA) External examination-3 hrs.	
Mode of assessment: Portfolio& Theory Exam	
Text Books 2. NIL. **References:** 1. Satish Grover: The Architecture of India 2. Percy Brown: Indian Architecture (Buddhist and Hindu Period0 3. TadgellChristopher:The History of Architecture in India 4. Rowl Benjamin. Art and Architecture of India 5. Vistara . The Architecture of India 6. Yatin Pandya: Concept of space making in Indian Traditional Architecture	

Scheme for End Semester Assessment (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Chapter Number	Instructions
I	Q.No.-1, Q.No.-2,	1, 2	Solve Any **1** out of **2**
II	Q.No.-3, Q.NO – 4,	3, 4	Solve Any **1** out of **2**
III	Q.No.-5, Q.No.-6	4,5	Solve Any **1** out of **2**

RETURN TO SEM III

Program : Architecture			
Course Title: MEASURED DRAWING		**Course Code: 21AATC206**	**Teaching Hours**
L-S-P: 0-2-0	**Credits: 2**	**Contact Hours: 4**	
ISA: 50	**ESA: 50**	**Total Marks: 100**	
Teaching Hours: 32	**Examination Duration: NA**		
Course contents The students can study vernacular, regional buildings and document, measured drawing to be prepared. The site visits/documentation could be carried out during vacation, weekends. The assignment may be given as group work. **UNIT I:** Detailed plans with all measurements to be compiled and submitted including site plan. The report comprising of historic evolution, climatic influence, construction techniques, materials applications to be prepared along with drawings.			**12**
UNIT II: Detailed sectional drawings, elevation drawings along with details of individual elements to be submitted. Study the construction techniques			**10**
UNIT III: Digital documentation in the form of photography, videography & analysis of the entire project.			**10**
Scheme for Internal semester assessment (ISA) Regular Assignments, Architectural models, rendered sheets and photos			
Scheme for End Semester Assessment (ESA) Term work: Evaluation of Portfolio, assignments by internal and external examiners			
Mode of assessment : Portfolio			
Text Books : NIL			
Reference Books : NIL			

RETURN TO SEM3

<table>
<tr><td colspan="3">Program: Architecture</td><td></td></tr>
<tr><td colspan="2">Course Title: STRUCTURES - III</td><td>Course Code: 21AATC207</td><td rowspan="4">Teaching Hours</td></tr>
<tr><td>L-S-P: 3-0-0</td><td>Credits: 3</td><td>Contact Hours: 3Hrs/week</td></tr>
<tr><td>ISA Marks: 50</td><td>ESA Marks: 50</td><td>Total Marks: 100</td></tr>
<tr><td>Teaching Hours: 42 Hrs</td><td>Examination Duration: 3Hrs</td><td></td></tr>
<tr><td colspan="3">Unit I
1.Reinforced cement concrete, grades of concrete, water cement ratio and its effect on strength of concrete, admixtures, retarders and use of high strength concrete in building structures.
2. Introduction to working stress method, assumptions, theory of singly reinforced sections. Moment of resistance and design of a section for flexure. Related elementary numerical.</td><td>14</td></tr>
<tr><td colspan="3">Unit II
3. Design philosophy of limit state method. Limit state for collapse for flexure.
4. Design of short columns subjected to axial loading
5.Design of columns for axial load and uniaxial moment using SP 16
5.Design of simply supported one way and two way slab
6. Design of restrained slabs</td><td>14</td></tr>
<tr><td colspan="3">Unit III
8. Design of isolated foundation for a column subjected to axial load
9.Visit of ongoing RCC structural buildings and collecting the data and preparing the neat sketches of the singly reinforcement of different components</td><td>14</td></tr>
<tr><td colspan="3">Scheme for Internal semester assessment (ISA)
Assignments, ISA 1, ISA 2</td><td></td></tr>
<tr><td colspan="3">Scheme for End Semester Assessment (ESA)
Theory Exams</td><td></td></tr>
<tr><td colspan="3">Mode of assessment:
Portfolio& Theory Exam.</td><td></td></tr>
<tr><td colspan="3">Text Books:
1. A.K. Jain, Reinforced concrete: Limit state design, 5th edition, New Chand and brothers, Roorkee.
2. S.N. Sinha, Reinforced concrete design, Tata McGraw Hill Publications, New Delhi.</td><td></td></tr>
<tr><td colspan="3">Reference Books
1. Karve S. R. and Shah V. L: Limit state Theory and design of Reinforced Concrete, Structures Publishers, Pune
2. S.N. Sinha, Reinforced Concrete Tata Mc.Graw Hill Companies. Second Revised Edition.
3. Ashok Kumar Jain, Arun kumar Jain, Reinforced Concrete Structures Laxmi Publications Pvt. Ltd. New Delhi
4. Ashok K. Jain. Reinforced Concrete Limit State Nemchand & Bros.Roorkee</td><td></td></tr>
</table>

Scheme for End Semester Assessment (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Chapter Number	Instructions
I	Q.No.-1, Q.No.-2, Q.No.-3	1, 2,	Solve Any 2 out of 3
II	Q.No.-4, Q.NO – 5 Q.No.-6,	3,4, 5,6,7	Solve Any 2 out of 3
III	Q.No.-7, Q.No.-8	8,9	Solve Any 1 out of 2

RETURN TO SEM3

Program : Architecture			
Course Title: DIGITAL TOOL - II		**Course Code: 21AATP201**	**Teaching Hours**
L-S-P: 0-0-1	**Credits: 1**	**Contact Hours: 2**	
ISA Marks:50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 28	**Examination Duration: NA**		
Course contents **UNIT I:**Introduction to SketchUp: File formats, Page setups, User interface, Types of tools Drawing and editing tools in SketchUp Basic drawing and editing tools to develop the basic forms			**10**
UNIT II: Dimensioning tools and navigation. Measuring, Dimensioning , Lettering, Navigation tools, etc Introduction to Advance Sketch up Advance tools for developing and creating architectural design using advanced features, shadows, Sand box tools , etc			**10**
UNIT III: Rendering techniques with SketchUp. Setting up Lights, camera, foreground and background, adding landscaping elements like trees, human figures, introduction to rendering and animation. Importing and exporting to other software. Explore Plug-in like V Ray, etc			**8**
Scheme for Internal semester assessment (ISA) Regular Assignments by internal examiner.			
Scheme for End Semester Assessment (ESA) Evaluation of Assignments in form of soft copy & hard copy worked during the course by internal and external examiners.			
Mode of assessment : Portfolio			
Text Books : NIL			
Reference Books:Online SketchUp Manual.			

RETURN TO SEM3

KLE Technological University | Creating Value, Leveraging Knowledge

IV SEMESTER

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Program: Bachelor of Architecture			
Course Title: Architectural Design – IV	**Course Code: 21AATC208**		
L-T-P : 0-6-0	**Credits: 06**	**Contact Hrs : 09 Hours**	**Teaching Hrs**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hrs.: 126		**Exam Duration: NA**	

Contents

Course overview
Students should have the knowledge required for understanding the influence of Climate on Architecture and to acquaint students with Design considerations for Hot –Dry, Warm-Humid and Composite climatic zones.

UNIT I

Chapter No. 1. Pre-design phase I — 26hrs

Literature study:/ live case study understands the nature of the project through literature study,

- Environment and Micro- climate
- User behavior and requirements Studying
- Utility and space enhancement
- Form and Function
- Horizontal and vertical circulation
- Site Planning and Landscape detailing
- Structural details as Column and Beam Design, Steel and Composite structures
- Building Services such as Fire Alarm system, HVAC, Water supply systems
- Design detailing considering the Barrier-free environment
- Socio-economic profile of user group
- Parking details and standards

Preparing the design program/ narratives
Site analysis

- Understanding of sun path diagram and solar orientation for the given latitude
- Sustainable site planning to create comfortable microclimate
- Application of building technology specially with low embodied energy
- Passive and active strategies, visual comfort in the learning spaces, study of day lighting
- Architectural expression, the students were encouraged to make 3D models of their design at every stage of design development

Chapter No. 2. Schematic design phase — 20hrs

Conceptualizing the design: Story line, Creative exercise: design diagrams, models, Finalizing the schema/concept

UNIT II

Chapter No. 3. Design development stage I — 10 hrs

Form development, envelope, structure and services, (through sketches and models) Space planning Overlapping the layers of functional, circulation, design principles, space experience, water supply and sanitation, electrical and illumination, climatic response, structural, etc

Chapter No. 4. Design development stage II Development of plan section and elevations	10 hrs
UNIT III	
Chapter No. 4. Final presentation drawings Preparation of final presentation drawings, views, sketches	30hrs
Chapter No. 5. Design Esquee Time bound minor design Project with Presentation and rendering	30hrs
Scheme for Internal semester assessment (ISA) Continuous evaluation of sheet submission and ISA along with models. Term work: Evaluation of Portfolio, assignments by the Internal examiner	
Scheme for End Semester Assessment (ESA) Term work: Evaluation of Portfolio, assignments by the External examiner	
Mode of assessment: Portfolio	
Reference Books 1. Joseph De Chiara & John Hancock Calendar, Time Saver Standards for Building Types 2. Various books and magazines about architectural design 3. Architecture: Form, Space and Order, Ching, Francis DK\ 4 Koenigsberger and Ingersol, Manual of Tropical Housing & Buildings (Part-II), Universities Press/Orient Blackswan, 1985 and onwards. 5 2 Krishnan Arvind, Baker &Szokolay, Climate Responsive Architecture, Tata McGraHill, New Delhi, 2001 and onwards.Mujumdar Milli, Energy efficient buildings,TERI India publications, 2002 and onwards.	

RETURN TO SEM4

Program: Architecture			
Course Title: Building construction & Materials-IV		**Course Code: 21AATC209**	**Teaching Hours**
L-S-P: 0-4-0	**Credits: 4**	**Contact Hours: 6Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 84 Hrs	**Examination Duration: 3Hrs**		
Course Overview: To familiarize the students with substructures, RCC Shallow and deep foundations, Lift shafts and various types of floor finishes**.**			
Unit I **Chapter 1: Sub Structure:** The study of various types of soil, and subsoil which influences the bearing capacity of the soil. Understand the guideline to be followed for shallow and deep foundations.			08
Chapter 2: RCC shallow foundations. The study of types of shallow foundations in detail such as Isolated and combined footings for the columns, piers and posts. Understanding the geometry, material specifications, codebook guidelines. Sketches and scaled drawings showing the details of footings.			12
Chapter 3: RCC Retaining walls. The study of need and types of retaining wall. Understand the types of geometry used, its area of usage, and construction methods. Detailed sketches and scaled drawings with the reinforcement details.			12
Unit II **Chapter 4: RCC Shallow Foundations-Raft.** The study of raft foundation its need and area of usage. Understand the conditions of usage, types, components of raft foundation, and codebook guidelines. Methods of construction. Detailed sketches and scaled drawings showing the reinforcement drawings.			20
Chapter 5: RCC Shallow Foundations-Deep. The study of deep Foundations-Piles, load bearing techniques, pile groups, pile caps, installation methods of pile foundations. Study of special deep foundations such as caissons, combined raft an pile, river and lake front foundation.			20
Unit III **Chapter 6: Lift Shafts** Study of Lift cores to be designed for different capacities and designing the formwork for lifts.			06
Chapter 7: Floor Finishes: Understanding the process of laying and maintenance of floor finishes . Ex- stone slab and tiles, timber flooring.			06
Scheme for Internal semester assessment (ISA) Regular Assignments, models. Term work: Evaluation of Portfolio, assignments by internal examiner			

Scheme for End Semester Assessment (ESA) Term work: Evaluation of Portfolio, assignments by the External examiner	
Mode of assessment: Portfolio	

Text Books: Nil

Reference Books :

1. McKay J.K Building Construction Metric Vol 1-4, 4th edi Orient Longman Pvt. Ltd, Mumbai,2002
2. "Construction Technology" Volume-I by R Chudley, ELBS & Longman group Ltd.
3. Barry R, "The construction of buildings" , Vol-2, 5th Edi, East West Press, New Delhi 1999.
4. Bindra S.P and Arora S.P, Building Construction-Planning Techniques and Method of Construction, 19th edi, Dhanpat Rai Pub ,NewDelhi, 2000
5. "Building Construction" by Janardhan Jha, Khanna New-Delhi.
6. Rangawal S.C ,"Building Construction" 22nd Edi, charotar Publishing house, Anand, 2004
7. "Engineering Materials" by Surendra Singh, Vikas Delhi.
8. "Building Materials" by S K Duggal, IBH New Delhi.
9. Sushil Kumar T.B of Building Construction 19th edi, Standard Pub House, NewDelhi, 2003.
10. Chowdhary K.P. Engineering Materials used in India, 7th Edi, Oxford and IBH Pub ltd New Delhi, 1990.
11. Building Construction Hand book : By R Chudly & R Greeno, Bullerworth Heinemann, New-Delhi.

RETURN TO SEM4

Program : Architecture			
Course Title: SERVICES – II (ELECTRICITY & ILLUMINATION)		**Course Code: 21AATC210**	**Teaching Hours**
L-S-P:2-0-0	**Credits: 2**	**Contact Hours: 3**	
ISA Marks:50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 28	**Examination Duration: 3 hrs**		
Course contents **UNIT I:** 1. Brief Introduction to electricity, its uses in everyday life and as an architectural application. Terminology used in electricity. 2. Supply and distribution of electricity to the end user (consumer) - generators and overhead and underground distribution systems, high tension and low tension cables, substations, transformers, service connections, panel board, energy meter. Internal supply and distribution. 3. Systems of wiring in building and their merits. Types of conduits, wires and cables. Accessories used in wiring. Branch circuits, calculation of electrical load for a residential building.			**10**
UNIT II: 4. Various devices used to protect shock, over loading, leakages and short circuits.(Fuses-definition and types, ELCB, Earthing-definition and its types, MCB'S) . Electrical symbols and Indian electricity rules-relevant codes of practice (NBC). 5. Electrical layout for different buildings. 6. Alternative sources of electricity and its implementation in building. Ways and methods of saving electricity in buildings.			**10**
UNIT III: 7. Introduction and terminologies, quality and quantity of light. Necessity of artificial lighting, combination of day light and artificial lighting.Methods of lighting- accent, ambient and task lighting. 8. Various types (incandescent, fluorescent/CFL, HID's, neon lamps) and selection criteria considering their temperament for residential, commercial, industrial, public buildings, for street and landscape lighting.Criteria's for selecting lamps for different occupancies. 9. Lighting design for different types of occupancies - landscape, parking areas, different tasks, street lighting, commercial building, residence.			**08**
Scheme for Internal semester assessment (ISA) Regular Assignments, models. Term work: Evaluation of Portfolio, assignments by internal examiner			
Scheme for End Semester Assessment (ESA) External examination-3 hrs			
Mode of assessment: Portfolio& Theory exam.			
Reference books: 1. H Cotton, Electrical Technology 2. L. Uppal, Electrical wiring, Estimating & Costing 3. Anwari., Electrical Engg. 4. M.S.N. Swamy, Lighting, MSN Marketing, Bangalore. 5. TorquilBarker,Concepts in Practice lighting, 1997, B.T. Batsford Ltd, 583,fullham Road,			

London.
6. Dr. Frith Abnwos and others. Electrical Engineering handbook.
7. S.L.Uppal and G.C. Garg. Electrical wiring (Estimating & Costing), Khanna Publishers,New Delhi.
8. Manufacturers' catalogues and journals.

Scheme for End Semester Assessment (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Chapter Number	Instructions
I	Q.No.-1, Q.No.-2, Q.No.-3	1, 2,3	Solve Any **2** out of **3**
II	Q.No.-4, Q.NO – 5 Q.No.-6,	4,5, 6	Solve Any **2** out of **3**
III	Q.No.-7, Q.No.-8	7,8	Solve Any **1** out of **2**

RETURN TO SEM4

Program: Architecture			
Course Title: HISTORY OF ARCHITECTURE - III		**Course Code: 21AATC211**	**Teaching Hours**
L-S-P: 2-0-0	**Credits: 2**	**Contact Hours: 2**	
ISA Marks:50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 28	**Examination Duration: 3 HOURS**		
Course contents **UNIT I:** Evolution of Imperial Indian Islamic Architecture in the following dynastic rule of Imperial style (Slave, Khilji, Tughlaq, Sayyid and Lodi) – E.g.Quwwat-ul-Islam Mosque, Qutub-Minar, Enlargement of Quwwat-ul-Islam Mosque by Iltutmish, Tomb of Iltutmish, Enlargement of Quwwat-ul-Islam Mosque by Ala-ud-din Khilji and Alai Darwaza, Tomb of Ghiyas-ud-din Tughlaq, Khirki Masjid, Shish Gumbad, Tomb of Mubarak Shah Sayyid and Tomb of Sikandar Lodi.Provincial Style –I (Bengal and Jaunpur) -– E.g. Adina Masjid, Pandua and Eklakhi Tomb, Pandua; Atala Masjid, Jaunpur and Jami Masjid, Jaunpur.Provincial Style -II (Gujarat and Malwa) E.g. Jami Masjid, Ahmedabad and Teen Darwaza, Ahmedabad , Jahaz Mahal, Mandu, Hindola Mahal, Mandu.			10
UNIT II: Evolution of provincial Indian Islamic Architecture in the following provinces of Provincial Style –III (Bijapur)- E.g. GolGumbaz, Ibrahim Rauza and Jami Masjid, BijapurMughal Architecture-Phase I - E.g. Humayun's Tomb, Delhi; Fatehpur Sikri (Layout and Diwan-i-khas, Jodhabai Palace, Jami Masjid, Tomb of Salim Chisti and Buland Darwaza)Mughal Architecture-Phase II - E.g. Akbar's tomb, Sikandra, TajMahal, Agra - Layout of the Tomb and the concept of Charbagh			10
UNIT III: Evolution of Indian British Colonial architecture in the dynastic rule of Early British Colonial Style - E.g. St Paul's Cathedral, Calcutta, Victoria Memorial, Calcutta, Bombay Town Hall, Bombay. Late British Colonial Style - E.g. Layout of New Delhi, Rashtrapati Bhavan and Parliament House.			08
Scheme for Internal semester assessment (ISA) Tests, Quiz, Assignments by internal examiner			
Scheme for Semester End Assessment (ESA) External examination-3 hrs			
Mode of assessment: Portfolio& Theory exam.			
Text Books: NIL			
Reference Books: 1. Tadgell Christopher, The History of Architecture in India from the Dawn of civilization to the end of the Raj; Phaidon Press, London, U.K. Ltd., 2002 onwards. 2. Brown Percy, Indian Architecture (Islamic Period) Vol II; DB Taraporevala and Sons Co.Pvt. Ltd., Bombay, 1983 and subsequent publications. 3. Grover Satish, Islamic Architecture in India, Galgotia Publications, India, 1996 onwards. Stierlin Henri, Stierlin Anne, Islamic Art and Architecture, Thames & Hudson, 2002 onwards. 4. Ferguson, J.A., Encyclopedia of World Architecture (Islamic Architecture), Aryan books, 1998 onwards. Fletchers Banister, A History of Architecture, C.B.S.Publishers, 1996 onwards. 5. Tillotson, G.H.R. , The Tradition of Indian Architecture: Continuity, Change and the Politics of Style since 1850, Oxford University Press, Delhi, 1989 onwards. Tomory Edith, A History Of Fine Arts In India And The West, Orient Blackswan Pvt Ltd.-(New Delhi), 2009 onwards. 6. Asher Catherine B., Architecture of Mughal India, Cambridge, 1995 onwards			

Scheme for End Semester Assessment (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Chapter Number	Instructions
I	Q.No.-1, Q.No.-2, Q.No.-3	1, 2,3	Solve Any **2** out of **3**
II	Q.No.-4, Q.NO – 5 Q.No.-6,	4,5, 6	Solve Any **2** out of **3**
III	Q.No.-7, Q.No.-8	7,8	Solve Any **1** out of **2**

RETURN TO SEM4

<table>
<tr><td colspan="3">Program : Architecture</td><td></td></tr>
<tr><td colspan="2">Course Title: THEORY OF ARCHITECTURE</td><td>Course Code: 21AATC212</td><td rowspan="4">Teaching Hours</td></tr>
<tr><td>L-S-P: 2-0-0</td><td>Credits: 2</td><td>Contact Hours: 2</td></tr>
<tr><td>ISA Marks: 50</td><td>ESA Marks: 50</td><td>Total Marks: 100</td></tr>
<tr><td>Teaching Hours: 28</td><td>Examination Duration: 3 HOURS</td><td></td></tr>
<tr><td colspan="3">Course Overview :
Theory of Architecture explores with relationship of various Ordering principles of both historical and contemporary works of architecture. It will also provide with an expanded framework for understanding and interpreting theories in antiquity to the present and to identify issues which shaped the approach to architectural design in a particular context and age.</td><td></td></tr>
<tr><td colspan="3">UNIT I:
1) Underlying Spatial Relationship in Architecture.
Definition , characteristic features, Variations of Space within a Space, Adjacent Space, Interlocking Space and space linked by a common space by analyzing examples of historic and contemporary buildings.
2)Underlying Organizing Principles of Architecture
Definition , characteristic features, Variations of Centralized, Linear, Radial, Grid and Cluster Organization by analyzing examples of historic and contemporary buildings.</td><td>12 hours</td></tr>
<tr><td colspan="3">UNIT II:
1)Theory in Antiquity & Renaissance (1st to 19th century)
Definition, origin, Character, influences of architectural theory in Antiquity, theory of Roman Era propounded by Vitruvius, Leon Battista Alberti and Andrea Palladio. Architectural theory of 18th century by Violet-Le-Duc and Gottfreied Semper. Architectural theory of 19th century by Robert Venturi.

2) Theories of built environment by Kevin Lynch (1918 – 1984) and Amos Rappoport (1929)
Understand contribution of Architectural thoughts by Kevin A Lynch and Amos Rapoport.</td><td>10 hours</td></tr>
<tr><td colspan="3">UNIT III:
Theories of built environment by Christopher Alexander (1936 – 2022) and Nikos A Salingaros (1952)
Understand different theories and contribution of Architectural thoughts by Christopher Alexander and Nikos A Salingaros</td><td>6 hours</td></tr>
<tr><td colspan="3">Scheme for Internal semester Assessment (ISA)
Analytical drawings and Book review</td><td></td></tr>
<tr><td colspan="3">Scheme for External semester Assessment (ESA)
End semester Examination : 3 hrs</td><td></td></tr>
<tr><td colspan="3">Mode of Assessment : Sketches and Theory exam</td><td></td></tr>
</table>

Reference Books:

1. Francis D K Ching, Form Space and Order
2. Vitruvious : Ten Books on Architecture
3. Alberti Leon: Ten Books on Architecture
4. Christian Norberg Shulz, Genius Locii
5. William: Modern Architecture since 19th century
6. Alexander Christopher: Timeless way of Building
7. Rappoport Amos: House Form and Culture
8. Rappoport Amos: Meaning of the built environment
9. Geoffrey Broadbent: Design in Architecture
10. Geoffrey Baker: Design strategies in architecture: An approach to analysis of form
11. Lynch Kevin: City Sense
12. Lynch Kevin: Image of the City
13. Alexander Christopher ;Urban Pattern
14. Alexander Christopher: New Theory of Urban Design
15. Alexander Christopher: Nature of Order,vol.1,2,3
16. Alexander Christopher: Synthesis of Form
17. Alexander Christopher: City is not a Tree
18. Rappoport Amos: Human Aspect of Urban Form
19. Rappoport Amos: History and Precedent of Environmental Design
20. Alberti Leon: Ten Books on Architecture
21. Attoe Wayne: Architectural and critical imagination
22. Hale A Jonathan: Building Ideas, An introduction to Architectural Theory
23. A Theory of Architecture: Nikos Salingaros
24. Principles of Urban Structure : Nikos Salingaro

Scheme for End Semester Assessment (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Chapter Number	Instructions
I	Q.No.-1, Q.No.-2, Q.No.-3	1, 2,3	Solve Any **2** out of **3**
II	Q.No.-4, Q.NO – 5 Q.No.-6,	4,5, 6	Solve Any **2** out of **3**
III	Q.No.-7, Q.No.-8	7,8	Solve Any **1** out of **2**

RETURN TO SEM4

Program : Architecture			**Teaching Hours**
Course Title: Working Drawing		**Course Code: 21AATC213**	
L-S-P: 0-2-0	**Credits: 2**	**Contact Hours: 3 Hrs**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 42 Hrs	**Examination Duration: NA**		
UNIT I: Introduction and importance of detailed working drawings in architectural practice. Creating working details for a residential / commercial project starting with foundation/footing and wall details			**20 Hrs**
UNIT II: Introduction to creating working details of doors, windows, staircase and floors			**14 Hrs**
UNIT III: Introduction to creating working details of interior, bathrooms, electrical & plumbing.			**08 Hrs**
Text Books: NIL			
Reference Books: Architectural Working Drawings: Residential and Commercial Buildings by William P. Spence Publisher: Wiley; ISBN-10: 0471574880 ISBN-13: 978-0471574880 Architectural Drawing: A Visual Compendium of Types and Methods (3rd edition) by Rendow Yee Publisher: Wiley; 3 edition (July 20, 2008) ISBN-10: 0471793663 ISBN-13: 978-0471793663 AutoCAD 2008 For Dummies. by David Byrnes, Mark Middle brook. Publisher: For Dummies; Revised edition (May 8, 2006) ISBN-10: 0471786497, ISBN-13: 978-0471786498			
Scheme for Semester End Examination (ESA) Assignments, Checking of Portfolio of Term Work / Viva.			

RETURN TO SEM4

Program: Bachelor of Architecture			**Teaching Hrs**
Course Title: STRUCTURES - IV		**Course Code: 21AATC214**	
L-S-P: 3-0-0	**Credits:3**	**Contact Hours: 3Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 42 Hrs	**Examination Duration: 3Hrs**		
Unit I			
1. Structural steel properties, available steel grades in India, loads on steel structures as per IS 875- 1987 (Part I and II) and standard rolled steel sections. 2. Fasteners – welded, bolt and nut connections in steel structures, to find the strength of a joint may subjected to axial load and eccentric load. Merits and demerits as compared to each other			**13**
Unit II			
3. Design of roof truss elements strut and tie. 4. Design of elements of braced steel structural system, compression members of single and built up sections. Design of compression members using SP 6-part I. 5. Design of slab base and foundation subjected to axial load.			**20**
Unit III			
6. Design of laterally restrained beams. 7. Moment resisting frames, comparison with braced frames, different types, Study of PEB structures. 8. Case study of steel building structures.			**9**
Scheme for Internal semester assessment (ISA) Assignments, ISA 1, ISA 2			
Scheme for End Semester Assessment (ESA) Theory Exams			
Mode of assessment: Theory Exams			
Text Books 1. Ram Chandra Design of Steel Structures Vol I Standard Publishers New Delhi References 1. P Dayaratnam Design of Steel Structures S Chand Publications New Delhi. !999 2. Vaziranzi & Ratwani Design of Steel Structures Khanna Publications New Delhi. !998 3. Duggal. Design of Steel Structures Tata McGraw Hill Publications New Delhi. !999 4. I.S.875-1978 5. S.P.6 (6) 6. IS 800 - 1984			

Scheme for End Semester Assessment (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Chapter Number	Instructions
I	Q.No.-1, Q.No.-2, Q.No.-3	1, 2	Solve Any **2** out of **3**
II	Q.No.-4, Q.NO – 5 Q.No.-6,	3, 4, 5	Solve Any **2** out of **3**
III	Q.No.-7, Q.No.-8	6, 7, 8	Solve Any **1** out of **2**

RETURN TO SEM4

Program: Bachelor of Architecture			
Course Title: E – Biomimicry in Architecture		**Code: 21AATE201**	**Teaching Hours**
L-S-P: 0-1-0	**Credits: 1**	**Contact Hours: 2**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 28	**Examination Duration: NA**		
Unit-I			
Introduction, History, characteristics, Types and approaches to Biomimicry.			**12**
UNIT II			
Introduction of Biomimicry principles and Technology towards sustainable development in architecture, Case studies.			**10**
UNIT III			
Application of Biomimicry Principles in Architecture			**6**
Scheme for Internal semester assessment (ISA) Field work Ideation, Concept design, Final Design Periodic reviews presentations of finding, concerns, Development stage of product and justification Term work: Evaluation of Portfolio, assignments by internal examiner			
Scheme for End Semester Assessment (ESA) Final Report Prototype design Evaluation of Portfolio, assignments by internal and external examiners			
Mode of assessment: Field work attendance Assignment			
Text Books:NIL			
Reference Books: 1. Michael Pawlyn, “Biomimicry in Architecture”,Riba Publishing, 2nd Edition, 2016 2. Janine M Benyus ,Biomimicry: Innovation Inspired by Nature, ISR Journal,			

RETURN TO SEM4

Program: Bachelor of Architecture			
Course Title: E– Human Centered Design - I		**Code: 21AATE202**	**Teaching Hours**
L-S-P: 0-1-0	**Credits: 1**	**Contact Hours: 2**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 28	**Examination Duration: NA**		
Course contents Understanding Design as a very old human capability that has been forgotten by the mainstream educational system and traditionalist alike. A modern human activity that can help the products, services and policies of the future within the constraints of our contexts.			12
UNIT I			
What is Design? Multiple Dimensions of Design, Processes and Applications What is Human Centered Design? 1 Looking: Observing Human Experience 2 Understanding: Analyzing challenges and opportunities 3 Making: Envisioning Future Possibilities			
UNIT II			
HCD to identify problem.			10
UNIT III			
Field Work, Define, Ideate, Prototype (Concept design, Detailed Design) ,Test, Feedback			6
Scheme for Internal semester assessment (ISA) Field work Ideation, Concept design, Final Design Periodic reviews presentations of finding , concerns, Development stage of product and justification			
Scheme for End Semester Assessment (ESA) Final Report Prototype design			
Mode of assessment: Field work attendance Assignment			
Text Books:NIL			
Reference Books: 1. Harold Nelson: The Design Way Intensions /Compositions/Value 2. John Heskett :Toothpics and Logos Objects/Communication/Environments/Identities/Systems/Contexts/Future 3. Klaus Krippendorff:The Semantic Turn ,Meaning of Artifact in :Use/Language/Life Cycle/Ecology			

RETURN TO SEM4

Program: Bachelor of Architecture			
Course Title: E– Space, Culture & Architecture		**Code: 21AATE203**	**Teaching Hours**
L-S-P: 0-1-0	**Credits: 1**	**Contact Hours: 2**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 28	**Examination Duration: NA**		
UNIT I			12
Introduction to Space, Culture & Architecture Sociological theories and cultural theories in relation to architecture Critical thinking – its basis and intent			
UNIT II			
Study and analysis of few Important Architectural Spaces of Cultural Significance Study and Documentation of Cultural Landscape.			**10**
UNIT III			
Research Paper on Space, Culture & Architecture			**6**
Scheme for Internal semester assessment (ISA) Field work Ideation, Concept design, Final Design Periodic reviews presentations of finding , concerns, Development stage of product and justification			
Scheme for End Semester Assessment (ESA) Final Report Prototype design			
Mode of assessment: Field work attendance Assignment			
Text Books:NIL			
Reference Books: 1) J Habraken *Sociologic of space* 2) Rappoport Amos*: House Form and Culture*			

RETURN TO SEM4

Program : Bachelor of Architecture			Teaching Hours
Course Title: E– Digital Rendering		Course Code: 21AATE204	
L-S-P: 0-1-0	Credits: 1	Contact Hours: 2	
ISA Marks: 50	ESA Marks: 50	Total Marks: 100	
Teaching Hours: 28	Examination Duration: NA		
Unit-I			
Digital Rendering Techniques Rendering techniques of plans, elevations sections using digital tool.			12
Unit-II			
Detail Rendering Adding details like human figures, furniture, trees, vehicles etc.			10
Unit-III			
Publish to various media Various print and web file formats			6
Sessional Work (Internal semester assessment) Regular Assignments and Rendered Drawings			
Scheme for Semester End Assessment (ESA) Term work: Evaluation of Portfolio, assignments by internal and external examiners			
Mode of assessment: soft copy and printed version.			

RETURN TO SEM4

Program: Bachelor of Architecture			Teaching Hrs
Course Title: E – Digital 3D		Code: 21AATE205	
L-S-P: 0-2-0	Credits: 1	Contact Hours: 4Hrs/week	
ISA Marks: 50	ESA Marks: 50	Total Marks: 100	
Teaching Hours: 28 Hrs.	Examination Duration: NIL		

Course Overview: Rhinoceros is a 3D computer graphics and computer aided design application software which is used by architects and other designing professionals to simulate 2D and 3D design simultaneously. Grasshopper is a computational software. Grasshopper along with Rhino allows design simulation to be parametric and controls the design simulation through computation.

Unit I	
Understanding the Basics of Rhino Working with the tools for design Basic modeling using tools in Rhino	**10**
Unit II	
Understanding the Basics of Grasshopper Working with the tools for design Basic modeling using tools in Grasshopper Simulating Rhino design with Grasshopper	**10**
Unit III	
1. Presenting the modeled design using the software knowledge.	**8**
Scheme for Internal semester assessment (ISA) Regular Assignments, models. ISA I -20 marks ISA II -20 marks Term work: Evaluation of Portfolio, assignments by internal examiner-10 marks	
Scheme for End Semester Assessment (ESA) Term work: Evaluation of Portfolio, assignments by the External examiner	
Mode of assessment: Portfolio	
Text Books **1. *Materials and Resources Required*:** 1. Books/References: Refer to online tutorials.	

RETURN TO SEM4

KLE Technological University | Creating Value, Leveraging Knowledge

V SEMESTER

Program: Bachelor of Architecture			Teaching Hours
Course Title: Architectural Design - V		Course Code: 21AATC301	
L-T-P: 1-5-0	Credits:6	Contact Hours:9 Hrs.	
ISA Marks: 50	ESA Marks: 50	Total Marks: 100	
Teaching Hours:126	Examination Duration: NA		

Course contents:

Design Project emphasizes to develop skills for a comprehensive understanding of design considerations of design thinking, Construction technology, Structural system and services. Design Project aims to provide skills for designing multi-user and multi-level spaces. To emphasize the role of construction in evolving expression. To focus on design detail as vital part of architectural expression in the urban context. To integrate building systems and effective communication of legible drawings.

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The design issues to be addressed are

- Multi user and multi-level space formation
- The integration of design, construction technology, structural systems, services, etc
- Integrate the horizontal and vertical circulation.
- Develop skills to correlate the materials and the resulting form.
- Integration of material, form and the appropriate building envelope.
- The architectural details of the building materials and assemblies.
- Details pertaining to the disabled, aged people and children.

The list of suggested spaces to be covered as design problems: Architectural Exhibition / display spaces Multi level Accommodation spaces, higher level academic spaces, multi activity Recreational spaces, Neighbor hood Community spaces, Healthcare Centers etc.

Necessary theoretical inputs to be given highlighting the norms and design issues. At least one major exercise and one minor design/ time problem should be given. The topics covered as design problems will have to be covered by the studio faculty members through lecture/slide show session and site visits.

Unit I	
Design Analysis: Research of the given design project, Analysis of precedents **Site analysis / Concept Development:** Site plan, Site analysis, site synthesis and zoning, Metaphors in design process and formulation of design brief, conceptual sketches, design development. **Preliminary Design Development stage:** Schematic drawings of plans with furniture Layout, sections, **Elevations and study models.** Parametricism for form finding, by changing the variables. 3D modeling, various types of surface modeling.	**36 Hrs**
Unit II	
Secondary Design Development stage: Development of detail plans, elevations and sectional details, Models, Development of Three-dimensional massing with corresponding fenestrations, etc. through visual programming language (VPL) Grasshopper that is a plug-in running within Rhinoceros 3D modeling software.	**63 Hrs**
Unit III	
Finalization of design: Presentation (computer aided) and rendering **Esquissee:** Given design topic to be completed within the time limit. Model Making: Final three-dimensional model/views Parametric design with the powerful visual programming languages. Grasshopper that is a plug-in running within Rhinoceros.	**45 Hrs**

Text Books: NIL

Reference Books:

1. Time Saver Standard for Architectural Data by John Hancock.
2. Architectural Graphic Standards by Ramsey and Sleeper.
3. Magazines and Design related books
4. Architecture: Form, Space and Order, Ching, Francis DK

5. Design and Form: The basic course at the Bauhaus, Itten, Johannes.
6. Elements of space forming, YatinPandya.
7. Architectural Composition, Krier, Rob
8. Le Corbusier an analysis of form. Geoffrey Baker.
9. Design Thinking process and methods. Rob Curedale.

Scheme for Semester End Examination (ESA):

Evaluation of Portfolio, assignments by internal and external examiners
The students have to present the entire semester work for assessment along with Models.
A viva-voce (Approximate 15 minutes /student) shall be conducted by a jury comprising of an external examiner and an internal examiner. The drawings, models and shall be presented by the student

RETURN TO SEM 5

Program: Bachelor of Architecture		
Course Title: Building Construction & Materials-V		**Course Code: 21AATC302**
L-S-P: 0-4-0	**Credits: 4**	**Contact Hours: 6Hrs/week**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 84Hrs	**Examination Duration: Viva Voice**	

Course Overview: To familiarize the students with the knowledge of various types of RCC slabs with reinforcement details.
To introduce principles and concepts of Vaults and dome construction techniques.
Introduce various types of staircases with reinforcement details.

Unit I

Chapter 1: RCC Slabs:
Introduction to types and selection criteria of slabs i) spanned in one direction ii) spanned in both directions i.e. iii) continuous iv) cantilever v) slope vi) ribbed vii) coffered viii) Filler slab, showing construction and reinforcement arrangements.
Shuttering and Centering for RCC Structures using different materials
Beam: Simply supported Beam, Continuous Beams, Concealed beam, Inverted beam, Connections of beam to other structural members

Chapter 2: RCC Flat Slab:
Introduction to advantages over regular slabs, including construction details and reinforcement arrangements for i) solid slab ii) drop panel iii) flared column top

Unit II

Chapter 3: Vaults and Domes.
Introduction to types, construction details with Shuttering/Centering, reinforcement and futuristic revival

Chapter 4: Staircase.
Introduction to types and calculation of stairs. Study of stairs in i) stone ii) timber iii) steel iv) RCC staircase. Construction details and of all the above types. Shuttering/Centering for folded plates and waist slab Staircase

Unit III

Chapter 5: Composite construction.
Concepts, different types of composite constructions, sketches showing details and construction methods. With sketches showing details and construction methods.

Scheme for Internal semester assessment (ISA)
Regular Assignments, models.
Term work: Evaluation of Portfolio, assignments by internal examiner

Scheme for End Semester Assessment (ESA)
Term work: Evaluation of Portfolio, assignments by the External examiner through VIVA VOICE

Mode of assessment:
Portfolio

Text Books

1. NIL.

References

1. "Construction Technology" Volume-I by R Chudley, ELBS & Longman group Ltd.
2. Barry R, "The construction of buildings", Vol-2, 5th Edi, East West Press, New Delhi 1999.
3. Bindra S.P and Arora S.P, Building Construction-Planning Techniques and Method of Construction, 19th edi, Dhanpat Rai Pub, NewDelhi, 2000
4. "Building Construction" by Janardhan Jha, Khanna New-Delhi.
5. Rangawal S.C ,"Building Construction" 22nd Edi, charotar Publishing house, Anand, 2004
6. "Building Materials" by S K Duggal, IBH New Delhi.
7. Sushil Kumar T.B of Building Construction 19th edi, Standard Pub House, NewDelhi, 2003.
8. Chowdhary K.P. Engineering Materials used in India, 7th Edi, Oxford and IBH Pub ltd New Delhi, 1990.
9. Building Construction Hand book : By R Chudly & R Greeno, Bullerworth Heinemann, New-Delhi.

RETURN TO SEM 5

Program: Bachelor of Architecture			Teaching Hours
Course Title: SERVICES – III (HVAC)		Course Code: 21AATC303	
L-T-P: 2-0-0	Credits:2	Contact Hours: 2 Hrs	
ISA Marks: 50	ESA Marks: 50	Total Marks: 100	
Teaching Hours: 28 Hrs.	Examination Duration: 3 Hours		
Unit I			
Introduction to Passive and Mechanical ventilation: 1. **Passive & Mechanical ventilation** - Need for mechanical ventilation in buildings, Applications in different situations. Air conditioning – Definition, Refrigeration cycle, Compressor, Condenser, Evaporator in Air- Conditioning system. 2. **Different types of Air Conditioning system** – Duct able and non-duct able air conditioners, Location analysis of different equipment's in different types of buildings. Air distribution systems- ducts, diffusers etc. 3. **Factors responsible for calculation** of air conditioning load. Application of appropriate AC system for different types of occupancies like Residential, commercial, industrial etc.			**12 Hrs**
Unit II			
4. Elevators: Introduction, different types of elevators like traction, hydraulic, double deck elevators, sky lobby, structure and interiors of lifts. Passenger handling capacity, space and physical requirement and layout. Locational analysis of elevators, grouping of elevators. **5. Escalators:** Definition, structure and different parts of escalator, application, Location and arrangement in different types of buildings.			**8 Hrs**
Unit III			
6. Fire safety of buildings: Introduction, Fire hazards, firefighting systems. Fire Norms by NBC, like min. doorway width, Calculation of Fire exits, Fire lifts and Fire Staircases regulations etc. as per bye-law. **7. Active fire protection:** Extinguishers, sprinklers Hose reels etc Systems adopted in various buildings against fire.			**8 Hrs**
Reference Books: 1. Principles of Heating, Ventilation, and Air Conditioning in Buildings, John W. Mitchell, James E. Braun 2. P. N. Anant Narayana., Refrigeration and Air conditioning, Third edition, Tata McGraw-Hill publishing Company Ltd, New Delhi. 3. Building Environments: HVAC Systems, Alan J. Zajac 4. HVAC for ARCHITECTS and ARCHITECTURAL ENGINEERS: A Practical Guide to HVAC Design Alexandra Dragan			

Scheme for Internal semester assessment (ISA)

I	Midterm Exam	25 marks
II	Activity - 1	15 Marks
III	Activity - 2	10 Marks

Scheme for Semester End Examination (ESA)

UNIT	8 Questions to be set of 20 Marks Each	Chapter numbers	Instructions
I	Question Numbers 1, 2 & 3	I, II and III	Solve Any 2 out of 3
II	Question Numbers 4, 5 & 6	IV and V	Solve Any 2 out of 3
III	Question Numbers 7 & 8	VI and VIII	Solve Any 1 out of 2

RETURN TO SEM 5

Program: Bachelor of Architecture			
Course Title: History of Architecture V		**Course Code: 21AATC304**	**Teaching Hours**
L-S-P: 2-0-0	**Credits: 2**	**Contact Hours: 2Hrs /week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 28Hrs	**Examination Duration: 3 Hrs.**		

Course Overview: To familiarize the students with the knowledge of Architectural and cultural changes evolved during Renaissance, Baroque, Arts and crafts movement, Art Noveau and Modern Architecture in Europe and India. To understand the sociocultural changes which are reflected in the building typologies through the transition.

Unit I	
1. Introduction to the Renaissance period. Understand the reason for the Renaissance, its influence, understanding the characters of the renaissance period. **2. Industrial Revolution and its Impact.** The advent of the Industrial Revolution, technological changes, Development of the railways and changes in settlement systems; Building of factory towns Rapid urbanisation and urban crisis; Birth of modern town planning; Garden City, City Beautiful and other visionary movements; New building technologies and implications on architecture – usage of use of concrete, steel and glass; new Industrial Exhibitions. **3. Art Noveau, Arts and Craft movement.** Roots of Art Noveau as a protest movement against classical architecture, fluidity and plasticity, organic influences; works of Antonio Gaudi, Victor Horta, C.R.Makintosh; Chicago school, Louis Sullivan's contribution to American architecture	10
Unit II	
4. Early Modern Architecture. De Stijl movement, Brutalism movement and Bauhaus school. **5. Modern Architecture**. Understand the concepts which influence the architecture which are seen in the works by F.L.Wright-Robie house, falling waters, Guggenheim museum, Johnson wax tower. Works of Ar.Le-corbuseir villa savoy, domino house, five points of architecture. Works of Mies Van der Rohe (Less is More), minimalism, glass and steel tower. Works of Ar.Walter Gropius and Louis Sullivan and Alvar Alto and his works. **6. Modern Architecture in India by European Architects.** Undertsand the works of Ar.Le-corbuseir and Ar.Louis I Kahn and Ar.Edwin Lutyens in India.	10
Unit III	
7. Architecture in India Post Independence. derstanding the influence of works done by Ar. B.V.Doshi, Ar.Charles Correa, Ar.Achyut Kanvinde, Ar.Raj Rewal, Ar.Laurie Baker and Ar.Uttam Jain.	08
NOTE: The architects and ideas mentioned above are indicative only. The course teacher may choose the ideas and works of architects to explain modern architecture.	
Scheme for Internal semester assessment (ISA) There shall be 2 ISA exams shall be scheduled as per the COE.	
Scheme for End Semester Assessment (ESA) Theory paper for 3 Hrs shall be conducted.	
Text Books NIL. **References** 1. Kenneth Frampton, Modern Architecture- A critical History 2. Bannister Fletcher, History of Architecture William Curtis, Modern Architecture since 1900 3. William Curtis, Modern Architecture since 1900 4. Bannister Fletcher, History of Architecture.	

Scheme for Semester End Examination (ESA)

UNIT	8 Questions to be set of 20 Marks Each	Unit numbers	Instructions
I	Q.No.-1, Q.No.-2, Q.No.-3	I	Solve Any 2 out of 3
II	Q.No.-4, Q.NO – 5 Q.No.-6,	II	Solve Any 2 out of 3
III	Q.No.-7, Q.No.-8	III	Solve Any 1 out of 2

RETURN TO SEM 5

Program: Bachelor of Architecture			
Course Title: Estimation And Costing.		**Code: 21AATC305**	**Teaching Hrs**
L-S-P: 2-0-0	**Credits: 2**	**Contact Hours: 2**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 28	**Examination Duration: 3 Hours**		

Course Overview :
This course introduces students to the fundamental principles and practices involved in the estimation of quantities and cost analysis for construction projects. It covers methods of preparing detailed estimates, specifications, rate analysis, valuation, and tendering procedures. Students will learn how to apply theoretical knowledge to real-world scenarios by preparing estimates for residential and commercial buildings.

Unit - I	
1)Introduction to Estimation 2) Types of Estimates 3) Detailed estimates for R C C framed structure buildings.	10
Unit - II	
4) Introduction to Schedule of Rates And Market rates. 5) Abstract Specifications for building constructions.	8
Unit – III	
6) Rate Analysis. 7) Applications	10

Scheme for Internal semester assessment (ISA)
Minor 1, Minor 2 & Assignment

Scheme for End Semester Assessment (ESA)
External examination-3 hrs

Mode of assessment:
Theory exam.

Text Books: NIL

Reference Books:
1. B N Dutta – Estimation & Costing.
2. M Chakraborti – Estimating, Costing, Specification & Valuation.
3. S C Rangawala –Estimation.
4. B C Punamia – Estimation & Costing

Scheme for Semester End Examination (ESA)

UNIT	8 Questions to be set of 20 Marks Each	Unit numbers	Instructions
I	Q.No.-1, Q.No.-2, Q.No.-3	I	Solve Any 2 out of 3
II	Q.No.-4, Q.NO – 5 Q.No.-6,	II	Solve Any 2 out of 3
III	Q.No.-7, Q.No.-8	III	Solve Any 1 out of 2

RETURN TO SEM 5

Program: Bachelor of Architecture.			**Teaching Hours**
Course Title: Landscape Design		**Course Code: 21AATC306**	
L-T-P: 0-2-0	**Credits: 02**	**Contact Hours: 3Hrs /week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours:42	**Examination Duration: viva**		
Course overview The students must be acquainted with basics of architectural design in terms of built and open space designs. It provides an overview of development of landscape design, site studies, plant studies and application of the knowledge at various levels of design.,.			
Unit I			
Chapter No. 1 Introduction definition of landscape design, landscape architecture, man-made elements, natural elements, Hardscapes and Softscapes A brief review of landscape design in various regions of the world like France, England, New york, Persia Japan, India etc. Examples of contemporary landscape architects like Martha Schwartz,Maya lin,Peter Walker and associates ,Sasaaki,Van Valkenburgh ,etc Indian landscape architects like Ravindra Bhan. Shaheer associates ,etc			04 hrs
Chapter No. 2. Landscape elements-land forms, water and vegetation. Principles of landscape design, and built environment. Selection and management of plant material in relation to built environment, taxonomy and classification of plants. Study and analysis of existing landscaped areas. Site visits and studio exercise of residential landscape design.			12 hrs
Unit II			
Chapter No. 3. Site planning and site analysis with reference to different characteristics like topography, vegetation, hydrology, access, surroundings etc.			04 hrs
Chapter No. 4. Philosophical and design issues related to site development-spatial and contextual relationships of built and outdoor space and circulation, site and its relationship to surroundings, importance of climate and social factors in development of site			04 hrs
Unit III			
Chapter No. 5 Natural and manmade landscape in urban and rural landscape. Contemporary attitude to development and design of open spaces-like urban spaces, courtyards, gardens, parks, Streetscape, street furniture, lampposts, pavements and other architectural elements in relation to architectural design			06 hrs
Chapter No. 6. Studio exercises emphasizing relationship between built form and outdoor areas and site planning issues for industrial, commercial, any public building.			12 hrs
Reference Books 1. Blane Alan, Landscape Construction and detailing , 1, B T Batsford Ltd, London , 1996 2. Lynch, Kevin, Site Planning, , 1, IT Press, Massachusetts, , 1962 3. Laurie, Michael, , An introduction to Landscape, , 1, II Ed, Prentice Hall, New Jersey, 1986 4. Santapau. H, Common Trees, 1, National Book Trust, New Delhi, , 1981			
Scheme for End Semester Assessment (ESA) Evaluation of Portfolio of Term Work / Viva			

RETURN TO SEM 5

Program: Bachelor of Architecture			**Teaching hours**
Course Title: STRUCTURES-V		**Code: 21AATC307**	
L-S-P: 3-0-0	**Credits: 3**	**Contact Hours: 3**	
ISA: 50	**ESA: 50**	**Total Marks: 100**	
Teaching Hours: 42	**Examination Duration: 3 Hours.**		
Unit - 1			
Chapter No.01: Introduction large span structures Introduction to the structural design project: Design of airport terminal building of dimension 50m X 100m as horizontal structural system			4 hrs
Chapter No. 02 : Design of structures Study of conventional structural system for horizontal large span structures and high rise vertical structures			10 hrs
Chapter No.03: PT slabs Structural behavior for the loads on structure as per IS 875-1984 and the roof system as post tensioned (PT slab)			3 hrs
Unit - II			
Chapter No.04 :Domes, arches and shells Study the structural system of dome structures i.e., Domes of polar arrays of curveted structural system in masonry, concrete, steel used as roofing system. To know the structural components of arch and vault structures, curved structural members with single span of masonry as roofing system..			6 hrs
Chapter No.05: Large span industrial buildings Long span industrial building: Triangular and vierendeel roof truss structural system, general configuration of industrial building, spacing of trusses and design. Dead load, live load and wind load as per IS 875:1984			9 hrs
Chapter No. 06: Stress/strain relations Material response to applied loads, intensity of stress, strain and types. Stress strain diagrams for major building materials, Modulus of Elasticity, composite sections, lateral strain Poisson's ratio and volumetric strain.			2 hrs
Chapter No.07:Cable and suspended structures Cable and suspended structures of long span system using cable and suspension			
Unit - III			
Chapter No.08:Space frames Space frames: Three dimensional trusses, their structural properties, strength due to three dimensional triangulation. space frame as roof system			4 hrs
Chapter No. 09: Fabric and pneumatic structures Study of thin flexible fabric cover that provide light weight free-form roofing sysytem			4 hrs
Text Books (List of books as mentioned in the approved syllabus) A.K. Jain, Reinforced concrete: Limit state design, 5th edition, Chand and brothers Daniel L Schodek, Structures, PHI Learning Private limited, 2014 **References** I S 456 - 2000, Code of practice for plane and reinforced concrete, 2000, BIS, 2000			
Scheme for Internal semester assessment (ISA) Assignments, ISA 1,ISA 2			
Scheme for End Semester Assessment (ESA) ESA theory exams			
Mode of assessment Theory exams			

Scheme for Semester End Examination (ESA)

UNIT	8 Questions to be set of 20 Marks Each	Unit numbers	Instructions
I	Q.No.-1, Q.No.-2, Q.No.-3	I	Solve Any 2 out of 3
II	Q.No.-4, Q.NO – 5 Q.No.-6,	II	Solve Any 2 out of 3
III	Q.No.-7, Q.No.-8	III	Solve Any 1 out of 2

RETURN TO SEM 5

Program: Bachelor of Architecture			**Teaching Hours.**
Course Title: Vernacular Architecture (Elective)		**Code: 21AATE301**	
L-S-P: 0-1-0	**Credits: 1**	**Contact Hours: 2 Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 28 Hrs	**Examination Duration: NA**		

Unit I	
Introduction to Vernacular Architecture. Definitions and theories, Categories, Contextual responsiveness: Climatic, Geographical, Anthropological and Cultural influences, Environment and Materials, Typical building materials, Built form & elements, Construction techniques & environmental performance. Regional Variations in Built Form Tribal Architecture Settlement Pattern, Dwelling Typology, Symbolism, Typical features, Construction materials and techniques. Illustrated case studies of vernacular settlements/building typology from various regions in India and abroad.	10 Hrs
Unit II	
Documentation and Analysis of Vernacular built form Documentation of Regional vernacular typology. Analysis of typology w.r.t Climate, Building materials & construction techniques, Geography, Anthropology, culture, etc	10 Hrs
Unit III	
Adaptations in Contemporary Architecture Sustainable building materials and construction techniques, Works of Laurie Baker, Hasan Fathy, Gerard Da Cunha, etc.	8Hrs
Internal semester assessment (ISA) Field work Ideation, Concept design, Final Design Periodic reviews presentations of finding, concerns, Development stage of product and justification.	
Text Books: Nil	

Reference Books:

Paul Oliver (Ed), Encyclopedia of Vernacular Architecture of the world, vol 1,2,3, , Cambridge University Press, Cambridge, 2001

Paul Oliver, Dwellings; The vernacular House worldwide, Cambridge University press, Cambridge, 2003

Bernard Rudofsky , Architecture without architects, Great British, 1981

Jain K,Jain M, Mud architecture of Indian desert, 2000

Asquith l and Vellinga M, Vernacular Architecture in the Twenty first century , Taylor and Francis Oxon, 2006

TipnisAishwarya, Vernacular traditions in contemporary architecture, Teri Press New Delhi, 2012

Udamale. s., Architecture for Kutch, English Edition, Mumbai, 2003

Brunskill, R. W. (1987). Illustrated Handbook of Vernacular Architecture. Castle Rock : Faber & Faber.

Carmen, K. (1986). VISTARA – The Architecture of India. The Festival of India Publications.

Cooper, I and Dawson, B. (1998). Traditional buildings of India. London : Thames & Hudson.

Kenneth, F. (1983). Towards a Critical Regionalism: Six points for an architecture of resistance, In The Anti-Aesthetic: Essays on Postmodern Culture. (Ed.) Hal, F. Seattle : Bay Press.

Muthiah, S., Meyappan, M., Ramswamy, V. and Muthuraman, V. (2000). The Chettiar Heritage. Chennai :Chettiar Heritage.

Pramar, V. S. (1989). Haveli-Wooden Houses and Mansions of Gujarat, Ahmadabad :Mapin Publishing.

Rapoport, Amos. (1969). House, Form & Culture. Eaglewood: Prentice Hall Inc.

Tillotsum, G. H. R. (1989). The tradition of Indian Architecture: Continuity, Controversy and Change since 1850. Delhi: Oxford University Press.

RETURN TO SEM 5

Program: Bachelor of Architecture			
Course Title: Sustainable Development of Living Heritage		**Course Code: 21AATE302**	**Teaching Hours**
L-S-P: 0-1-0	**Credits: 1**	**Contact Hours: 2 Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 28Hrs	**Examination: NA**		

Course Overview:

The course aims to provide an insight into the relevance of the historic core of cities and towns and its importance in the development of sustainable towns/villages. It deals with, the city as a universal phenomenon, an expression of mankind's achievement in social and economic order and, such, the basic concepts for the conservation having a universal application. The course will raise the student's consciousness, of the value of their cultural heritage before it is lost forever. At the end of the course students will be able to understand and analyze the relationship of culture and nature (linking nature and culture in urban environments; uniting landscape approaches such as cultural, agricultural, historic urban landscape, connections between urban and rural. It will enhance their ability to see, feel, map and analyze the built environment and its multiple layers and prepare them to take informed design /strategic decisions while working in culturally rich heritage areas.

The role of Cultural heritage in achieving overlapping SDG's with emphasis on SDG11 Target 11.4

Unit I	
Chapter 1: What is Culture and Cultural Heritage? Role of Cultural Heritage in meeting Sustainable Development Agenda 2030.	4
Chapter 2: Charters Need for conservation of living cultural heritage sites. Values&Ethics Venice Charter, Australian Burra Charter, International Charter for the Conservation and Restoration of Monuments and Sites(ICCROM) ICOMOS Charter for the Conservation of the Historic Towns and Urban Areas Compilation of the secondary data in the expected framework to support the onsite first hand documentation	4
Unit II	
Chapter 3: HUL Approach and framework Historic Urban Landscape framework to analyse the cultural landscape. Inventory of comprehensive/detail cultural resource, natural resources and intangible Heritage SWOT analysis	10
Unit III	
Chapter 4: Report Mapping Cultural Landscape Value Assessment of natural and built environment and drafting outstanding regional/national/universal values Establishing Significance, Authenticity ,Integrity of the place Drafting vision document and strategic plan for value based, inclusive and sustainable development of living heritage.	10

Scheme for Internal semester assessment (ISA):

Stage 1 Review of the archival studies and mapping of identified cultural landscape

Stage 2 Documentation and Analysis of built environment, historical and cultural significance

Stage 3 Framing vision document, objectives, development strategy, action plans

Scheme for End Semester Assessment (ESA):

Term work: Presentation and draft report

Mode of assessment: Final Report

Text Books

NIL.

References:

1. ICOMOS scientific publications on Intangible Cultural Heritage
2. Christian NorbergShulz, Genius Locii
3. Alexander Christophe ;Urban Pattern
4. Alexander Christopher: Timeless way of Building
5. Feilden Bernard, Guidelines for Conservation, A technical manual
6. Jacobs, J (1961) The Death and Life of Great American Cities, New York, Random House.
7. Lynch,K (1981) A Theory of Good City Form, MIT Press
8. Burgess, J. (1900/1997), “The Muhammadan Architecture of Ahmadabad”, Part1 AD 1412-1520, Plate II, Archaeological Survey of India, New Delhi. [Google Scholar]
9. Gupta, D. (2007), Identification and Documentation of Built Heritage in India , Conservation Briefs, INTACH (UK) Trust, New Delhi. [Google Scholar]
10. Logan, D. and Mackay, R. (2013), “Inventories and heritage management: the Australian experience, heritage inventories”, Conservation Perspectives, The GCI Newsletter, Vol. 28 No. 2, pp. 10-12. [Google Scholar] [Infotrieve]
11. Rodwell, D. (2007), Conservation and Sustainability in Historic Cities , Blackwell publishing, Oxford. [Google Scholar]
12. Thornes, R. and Bold, J. (Eds), (1998), Documenting the Cultural Heritage , Getty Information Institute, Los Angeles, CA, available at: http://archives.icom.museum/objectid/heritage/fore.html (accessed 20 March 2016). [Google Scholar]
13. UNESCO (1972), “Convention concerning the protection of the world cultural and natural heritage”, UNESCO, Paris, available at: http://whc.unesco.org/archive/convention-en.pdf(accessed 23 November 2012). [Google Scholar]
14. UNESCO (2011), “Recommendation on the historic urban landscape”, UNESCO, Paris, available at: http://whc.unesco.org/en/activities/638 (accessed 18 October 2013). [Google Scholar]
15. UNESCO (2013), “Operational guidelines for the implementation of the world heritage convention”, UNESCO, Paris, available at: http://whc.unesco.org/archive/opguide13-en.pdf(accessed 11 September 2013). [Google Scholar]
16. Valetta’s Principles for the Safeguarding and Management of Historic Cities,Towns and Urban Areas. Adopted by the 17th ICOMOS GA, Paris2011
17. Web sites:ICOMOS,ICCROM,UNESCO Manuals for Historic towns and villages, Charter of Venice

RETURN TO SEM 5

Program: Bachelor of Architecture			
Course Title: E-Theory of Design		**Course Code: 21AATE303**	**Teaching Hours**
L-S-P: 0-1-0	**Credits: 1**	**Contact Hours: 2 Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 28 Hrs	**Examination Duration: NIL**		
Unit I			
Chapter 1: Introduction to Theory of Design. Introduction to theory of Design through form, function and materialization. Characteristics of form in design seeking geometrical order and expression of formal qualities. Design approach by altering the way people do things and providing an exciting perceptual experience within interior spaces.			08 hrs
Unit II			
Chapter 2: Analysis of Primary Elements in Theory of Design. Analysis of primary elements, organization, circulation, proportion and scale in the design process. Role of Knowledge in Design and theory of design with response to function.			08 hrs
Unit III			
Chapter 3: Applying principles into Design Process. Project: Analysed primary elements of design with form, organization, circulation, proportion and scale to be applied in design process and arrive at an conclusion in design through story line.			12 hrs
Scheme for Internal semester assessment (ISA) ISA 1 & 2 -20 marks Assignment 10 marks			
Scheme for End Semester Assessment (ESA) Portfolio submission			
Mode of assessment: Assignments and portfolio submissions.			
Text Books NIL. **References :** 1. Design, by Terence Conran, 1996 2. Design Strategies in Architecture: An Approach to the Analysis of Form by Geoffrey Baker, 1996 3. Le Corbusier - An Analysis of Form, by Geoffrey Baker, 1996 4. Operative Design: A Catalog of Spatial Verbs, by Anthony di Mari, 2013			

RETURN TO SEM 5

Program: Bachelor of Architecture			Teaching Hours
Course Title: **Elective –E Non-Conventional Technologies**		**Course Code: 21AATE304**	
L-S-P: 0-1-0	**Credits: 1**	**Contact Hours: 2 Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 28	**Examination Duration: NA**		
UNIT I			
Introduction to Environment and Society Environmental friendly technologies- concept and need Solar Energy -Solar thermal technology -Photovoltaic technology -Building integrated Photovoltaic (BiPV)			12 hrs
UNIT II			
Wind energy -Wind turbines -Wind and solar hybrid technology			08 hrs
UNIT III			
Geothermal, Hydro and Tidal energy -Geothermal energy for heating in buildings -Hydropower -Energy from sea water -Tidal energy			08 hrs
Text Books: Nil			
Reference Books: 1. Energy Sustainability Through Green Energy (Springer, 2015) 2. Architecture in a Climate of Change, 2005			
Scheme for Semester End Examination (ESA) Checking of Portfolio of Term Work / Viva			

RETURN TO SEM 5

Program: Bachelor of Architecture			
Course Title: Architectural Conservation		**21AATE305**	**Teaching Hours**
L-S-P: 0-1-0	**Credits: 1**	**Contact Hours: 2 Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 28	**Examination Duration: NA**	**Semester: VI**	
Course Objectives To make students sensitive to Architectural Conservation and introduce to theories of building conservation. Course contents:			
Unit-I			
Deterioration : causes, types Methods of Restoration: correction techniques, replacing, prototype development,			10
Unit-II			
Historic materials and their properties, various technologies for investigating masonry, foundation, traditional and modern repair methods. Restoration with Materials: wood , stone, earth, etc			10
Unit-III			
Identification of the structure appropriate for conservation in context of the various conservation-values, study of architectural style, structural conditional assessment, Corrective measures.			8
Sessional Work (Internal semester assessment) Documentation of building, structural and Physical Layering, building components and materials like roof, walls, doors ceiling etc, building defects , Corrective measures			

References :

1. James M. Fitch, “Historic Preservation: Curatorial Management of the Built World” University Press of Virginia; Reprint edition, 1990
2. Conservation Manual , Bernard Fielden; INTACH Publication, 1989
3. Surveying Historic Buildings : David Watt
4. Development and Design of Heritage Sensitive Site, Kenneth Williamson

RETURN TO SEM 5

Program: Bachelor of Architecture			Teaching Hours
Course Title: E-Bio Inspired Architecture		**Code: 21AATE306**	
L-S-P: 0-1-0	**Credits: 1**	**Contact Hours: 2 Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 28 Hrs	**Examination Duration: NIL**		
Unit I			
Chapter 1: Introduction to Bio-Inspired Architecture Introduction, Definition of Biomimicry, Approaches to biomimicry, Basic principles of Biomimicry, Steps to adopt in biomimicry, Biomimicry in Architecture, Mimicking by using natural substitutes and synthetic substitutes.			08hrs
Unit II			
Chapter 2: Levels in Bio-Inspired Architecture. Organism Level –an object or form directly copies from a living organism. Behavior level – architecture takes inspiration and the workings of certain plant or animal behavior. Ecosystem level–buildings are totally self-sufficient, or fully solves a problem. Sustainability through biomimicry			08hrs
Unit III			
Chapter 3: Analysis of Biomimicry in Architecture. Analysis and application of Biomimicry in Architecture with respect to concept, form development, design approach, levels in bio-inspired architecture, material usage and storage of energy.			12hrs
Scheme for Internal semester assessment (ISA) ISA 1 & 2 -20 marks Assignment 10 marks			
Scheme for End Semester Assessment (ESA) Portfolio submission			
Mode of assessment: Assignments, material study and sketches.			

RETURN TO SEM 5

Program: Bachelor of Architecture			
Course Title: Architecture and Ecology		**Course Code: 21AATE307**	**Teaching Hours**
L-S-P: 0-1-0	**Credits: 1**	**Contact Hours: 2 Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 28 Hrs	**Examination Duration: NA**		
Unit I			
Chapter 1: Architecture without Architects – Concepts of Sustainable development: Vernacular practices of sustainable building design and practices. Study of materials, building envelope. Documentation of existing eco-friendly buildings.			10
Unit II			
Chapter 2: Sustainable Architecture by Eminent Architects Projects designed using Sustainable parameters, Materials, alternative construction Technique, Nature inspired, Biomimicry etc. by eminent architects / firms like Laurie Baker, Didi Contractor, Anupama Kundoo,Yatin Pandya, Chitra Viswanath, Sathya Prakash Varanasi, Anagram Architects, Hunnarshala etc.			10
Unit III			
Chapter 3: Green Buildings Introduction to building rating systems: Components, weightage and point systems. Study of criteria of Indian Green Building Council. Agencies and institutions in it like TERI, IGBC. Case studies of recently designed Green Buildings in India and all over the world.			08
Scheme for Internal semester assessment (ISA) Reviews and Assignments			
Scheme for End Semester Assessment (ESA) Portfolio of Assignments Submission			
Mode of assessment: Portfolio Assessment by External			
Text Books - Nil **References** • Architecture without Architects – Bernard Rudofsky • Manual of Tropical Housing and Building – Otis Koenigsgerger and others • Energy Efficient Buildings in India – Mili Mujumdar , TERI • Encyclopedia of Vernacular Architecture of the World – Paul Oliver • Built to Meet Needs: Cultural Issues in Vernacular Architecture • Ecology and Environments - Odum P Eugene			

RETURN TO SEM 5

KLE Technological University | Creating Value, Leveraging Knowledge

VI SEMESTER

Program: Bachelor of Architecture			**Teaching Hours**
Course Title: Architectural Design VI (Housing)		**Code: 21AATC308**	
L-T-P : 1-5-0	**Credits: 6**	**Contact Hours: 10**	
ISA Marks:50	**ESA Marks:50**	**Total Marks:100**	
Teaching Hours:140	**Examination Duration: NA**		

Course contents:

Housing Studio aligns with state and national policy for housing for all, which is inclusive in nature. Mass housing, Issues related to housing shortages, incremental housing, sites and services schemes, slums and squatter settlements. Design in a climate responsive and environment friendly way while planning medium sized housing complexes. Apply the appropriate technology for Low cost housing, self-help housing, Co-operative housing, Housing based on income groups, density patterns and arrangement of units, temporary housing for disaster mitigation, rehabilitation housing, slum upgradation, etc.

The students are expected to carry out detailed site analysis, documenting physical features, vegetation, land forms soil characteristics, slope analysis and natural drainage patterns, building guideline (bye laws). Site planning exercise should depict understanding of vehicular and pedestrian movement patterns, land grading and conservation of ecologically sensitive features;

They are also expected to be conscious about the need for energy conservation through passive design. They will apply advanced simulation and modeling techniques to orient their buildings and decide energy performance parameters. Sample quantity estimates and specifications are to be prepared.

Studio project can be low-rise high-density housing or high-rise high density housing project. While designing socio-economic determinants, regulatory and technological alternatives shall be studied in detail. Exercises in simulation and conceptual modeling shall be conducted. Application of concepts of project phasing, financing and construction planning are to be applied in low-rise high-density housing or high-rise high density housing. The design shall be sensitive to the needs of disabled, aged people and children.

Housing projects can be attempted with added complexities for example, dense context, occupation based, traditional urban fabric, social status and prevalent social strata. Details from the dwelling cell to immediate shared space to communal space shall be emphasized and worked out. Socio cultural layer of the occupants shall form a strong fabric in the ultimate weave of the design. Projects shall aim at developing a sensitive attitude towards micro level human habitation and role of architecture in enhancing or curbing the quality of living.

Unit I	
Design Analysis : Research of the given design project, Analysis of precedents. Site analysis / Concept Development: Site plan, Site analysis, site synthesis and zoning, Formulation of design brief ,conceptual sketches, **Design development.** Preliminary Design Development stage: Schematic drawings of Master Plan sections , elevations and study models	30 hrs
Unit II	
Design of Prototype to ensure interrelationship between the building codes, efficiency metrics, urban design issues and architectural approaches. Development of detail plans, elevations and sectional details, Models, Development of Three dimensional massing with corresponding fenestrations, details of services and structural system. Detailing of Public/open spaces and amenities.	60 hrs
UNIT III	
Finalization of design: Report and portfolio in computer aided Architectural Presentation and rendered drawings	50 Hrs

Text Books - Nil

Reference Books:

1. Brooks, R. G. (1988). Site Planning: Environment, Process and Development. Michigan.
2. Clapham, D., Clark, W. A. V. and Gibbs, K. (2012). The Sage Handbook of Housing Studies. London : Sage Publications.
3. Correa, C. (2010). A Place in the Shade: The New Landscape and Other Essays. New Delhi : Penguin Books.
4. Ferre, A. and Tihamer, S. H. (2010). Total Housing: Alternatives to Urban Sprawl. New York : ACTAR Publishers.
5. Greater London Council. (1978). An Introduction to Housing Layout: A GLC Study. London.

6. Lee, K. E. (1984). Time Saver Standards for Site Planning. McGraw-Hill Ryerson.
7. Levitt, D. and Levitt, B. (2010). The Housing Design Handbook. New York : Routledge.
8. Root, B. J. (1985). Fundamentals of landscaping and site planning. AVI Publications.
9. Untermann, R. and Small, R. (1977). Site Planning for Cluster Housing. Van Nostrand Reinhold
10. HUDCO publications: Housing for Low income, Sector Model.
11. “Saxena A.K., Sociological Dimensions of Urban Housing and Development” Wealth publications. 2004
12. Leuris S, Front to Back: “A design Agenda for Urban Housing”, Architectural Press, 2006.
13. Richard Kintermann and Robert Small, “Site Planning for Cluster Housing”, Van Nastrand Reinhold company, Jondon/ New York 1977.

Scheme for Semester End Examination (ESA)

Evaluation of Portfolio, assignments by internal and external examiners

The students have to present the entire semester work for assessment along with Models. A viva-voce (Approximate 15 minutes /student) shall be conducted by a jury comprising of an external examiner and an internal examiner.

RETURN TO SEM 6

Program: Bachelor of Architecture			
Course Title: Building construction & Materials-VI		**Code: 21AATC309**	**Teaching Hours**
L-S-P: 1-3-0	**Credits: 4**	**Contact Hours: 6 Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 84Hrs	**Examination Duration: Viva Voice**		

Course Overview: To familiarize the students with the knowledge of various types of Steel structures, Joints, Foundations, splicing of steel members, flexural components, roofing components and materials, framed steel structures and composite construction with protection to metal surfaces

Unit I	
Chapter 1: Ferrous metals and steel structures. Types of ferrous metals used, their properties and their application in Architecture. Standard and built-up sections, various types of joints, bolted and welded connections for components and brackets. Steel Sections-Advantages and disadvantages over RCC structures. Introduction to standard structural steel solid and hollow sections available. Joining of Sections- Study of joining methods like soldering, brazing, folding/crimping, and riveting. Steel Columns-Single and hollow section ii) built up with solid sections. Joinery details of base and cap plate for solid single member, hollow and built-up column.	18
Chapter 2: Foundation and bearing units for steel structures: Foundation- Construction details for steel columns with concrete block, For Columns- Flexible and rigid, slab based, gusset based, rocker bearing and roller bearing. For Beams- Pin/ Hinged/ Fixed/ Rocker and Roller.	12
Chapter 3: Splicing for Steel Members: Columns, Beams and frames. Different types with joinery.	12
Unit II	
Chapter 4: Flexural components for steel structures: Purlins, Beams, Girders, castellated beam, Vierendeel Girder, Lattice girder. Joinery, components and installation.	18
Chapter 5: Roofing system for steel structures. Types, forms and components like girders, trusses, purlins braces, eaves, storm, water drains, ridge, hip, valley and roofing materials. North light truss	12
Unit III	
Chapter 6: Framed Steel structures: Portal frames, the concept of Pre-engineered buildings (PEB). Types of frames, components and spans.	06
Chapter 7: Weatherproofing materials: Presentations and display of products by vendors	06

Scheme for Internal semester assessment (ISA)

Regular Assignments, models.

Term work: Evaluation of Portfolio, assignments and Scaled models by internal examiner

Scheme for End Semester Assessment (ESA)

Term work: Evaluation of Portfolio, assignments and Scaled models by the External examiner through VIVA VOICE

Mode of assessment:
Portfolio and scaled models

Text Books
NIL.

References

1. "Construction Technology" Volume-I by R Chudley, ELBS & Longman group Ltd.
2. Barry R, "The construction of buildings", Vol-2, 5th Edi, East West Press, New Delhi 1999.
3. Bindra S.P and Arora S.P, Building Construction-Planning Techniques and Method of Construction, 19th edi, Dhanpat Rai Pub, NewDelhi, 2000
4. "Building Construction" by Janardhan Jha, Khanna New-Delhi.
5. Rangawal S.C ,"Building Construction" 22nd Edi, charotar Publishing house, Anand, 2004
6. "Building Materials" by S K Duggal, IBH New Delhi.
7. Sushil Kumar T.B of Building Construction 19th edi, Standard Pub House, NewDelhi, 2003.
8. Chowdhary K.P. Engineering Materials used in India, 7th Edi, Oxford and IBH Pub ltd New Delhi, 1990.
9. Building Construction Hand book : By R Chudly & R Greeno, Bullerworth Heinemann, New-Delhi.

RETURN TO SEM 6

Program: Bachelor of Architecture			Teaching Hours
Course Title: SERVICES – IV (Acoustics)		**Code: 21AATC310**	
L-T-P: 2 – 0 - 0	**Credits: 2**	**Contact Hours: 2Hrs**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 28 Hrs	**Examination Duration: 3 Hours**		
Prerequisites: Nature and properties of sound, Physics of sound – Sound propagation basic terminologies – frequency, wavelength pitch tone, sound pressure, sound intensity, decibel scale, loudness. Sound distance- inverse square law. Introduction and Scope of Acoustics:			
Unit I			
Acoustics in built environment - Behavior of sound in enclosed spaces, Reflection of sound, Nature of Reflection from plane, Convex & concave surfaces, sound diffraction, Echoes, Whispering galleries, Dead spots & sound foci. Reverberation, reverberation time, use of Sabine's formulae and its interpretation. Room reverberation's calculations **Study of Acoustical Materials:** **Sound Absorbers:** (Acoustical Foam, White Printable Acoustical Panel, Fabric wrapped panels, Wall Acoustical Coverings, Ceiling Tile, and Baffles & Banners). **Sound Diffusers:** such as (Quadra Pyramids diffusers, Pyramid Diffuser, Double duty Diffusers, Quadric Diffuser) etc. Absorption coefficient of Indigenous acoustical materials method of setting out of raked seating.			12 Hrs
Unit II			
Noise: Classification of Noise, Environmental impact of noise & acceptable noise levels. Principles **Applications of noise control:** Sound proof doors and windows, sound leaks in doors and windows, floating floors, cavity wall construction, discontinuous joints, noise reduction between rooms and floors, resilient hangers. **Of noise control –** noise sources, airborne & structure borne sound. **Vibration isolation –** Damping of noise, noise barriers, noise transmission through ducts, Design criteria for Industrial noise control, planning considerations, use of unit absorbers, treatment of floor & wall.			8 Hrs
Unit III			
Study and development of - Auditoriums Brief about History of Greek & Roman style theatres, open air theatre concept and Design standards and details for auditoriums. Simulation using software's like soft DB, Insul, acoustica etc			8 Hrs
Reference Books: 1. Architectural Acoustics Principles and Design "By David R. Johnson and Madan L. Mehta. 2. "Auditorium Acoustics and Architectural Design" By Michael Barron. 3. "McDavid Egan (1988)-Architectural Acoustics" McGraw hill book co., NY. 4. Parich, Peter (1979) Acoustics: Noise and Buildings, Faber and Faber, London 5. Acoustics and Noise Control: B.J. Smith, R.J. Peters, S Owen, Longman Group Ltd. U.S.A., 1982 6. Acoustical Designing in architecture: Vern o. Knudsen and Cyril M. Harris, John Wiley & Sons, inc. London. 1963 7. Master Hand book of Acoustics: Falcon Everest, 4ed, McGraw-Hill, Two Penn Plaza, New York, NY 10121-2298 (Delhi- India), 1945 8. Acoustics Noise and buildings: P.H. Parkin, H.R. Humphreys and J.R Cowell, 4ed, Ebenezer Balis and Son, Ltd., the Trinity Press, Worcester, and London, 1979			

9. Acousics : R. L. Suri, 1ed, Asia Publishing, Mumbai, 1966	
Scheme for Internal semester assessment (ISA) ENTRY TEST: 5 marks MIDTERM - 20 Marks ASSIGNMENT 1 – 15 Marks ASSIGNMENT 2 – 10 Marks	

Scheme for Semester End Examination (ESA)

UNIT	8 Questions to be set of 20 Marks Each	Chapter numbers	Instructions
I	Question Numbers 1, 2 & 3	I	Solve Any 2 out of 3
II	Question Numbers 4, 5 & 6	II	Solve Any 2 out of 3
III	Assignment	III	Design application Solve 1 OUT OF 1

RETURN TO SEM 6

Program: Bachelor of Architecture			
Course Title: Contemporary Architecture		**Course Code: 21AATC311**	**Teaching Hours**
L-S-P: 2-0-0	**Credits: 2**	**Contact Hours: 2 Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 28 Hrs	**Examination Duration: 3 Hrs**		

Course Overview: To do a critical survey of contemporary architecture from the 1960s to the present, and to provide an understanding and appreciation of contemporary issues and trends in Indian and western architecture in terms of ideas and directions.

Unit I	
1) Last phase of Modern Architecture Ideas. Works of Richard Meier (Smith House, Connecticut and Getty Centre, Brent Wood, LosAngeles) and Charles Moore (Architect's own House at Orinda & Piazza d"Italia, New Orleans), Bernard Tschumi (Kyoto Railway Station Project & Parc de la Villete, Paris). Works of Frank Gehry (Aerospace Museum, Santa Monica & Guggenheim Museum, Bilbao).	**6**
2) Hi-tech architecture or Structural Expressionism- 1 An architectural style that emerged in the 1970's: The High-tech architecture practitioners include British architects Sir Norman Foster (Hong Kong Shangai Bank and Renault Distribution Centre, Sidon, England), Sir Richard Rogers, Sir Michael Hopkins.	**2**
3) Hi-tech architecture or Structural Expressionism- 2 The High- tech architecture practitioners include Italian architect Renzo Piano (Pompidou Centre, Paris & Menil Museum, Houston) & Spanish Architect Santiago Calatrava (Lyon- Satolas Railway Station and Olympic Stadium at Athens) .	**2**
Unit II	
4) Postmodern Architecture Development of Postmodernism with its origins in the alleged failure of modern Architecture from 1950's and spreading in the 1970s and its continuous influence on present-day architecture. Ideas and works of Michael Graves, James Stirling, Robert Venturi etc.	**4**
5) Hyper theories of Architecture – 1 Development of Postmodern architecture in 1980s is the ideas of DE constructivism including, Frank Gehry (Aerospace Museum, Santa Monica and Guggenheim Museum, Bilbao), Daniel Leibskind (Jewish Museum, Berlin & World Trade Centre, New York), Rem Koolhas (Dance Theatre, The Hague Netherlands Sports Museum).	**4**
6) Hyper theories of Architecture – 2 Ideas of DE constructivism including, Peter Eisenman, ZahaHadid (The Peak Club, HongKong and IBA Housing Bloack 2, West Berlin), Coop Himmelb(l)au and Bernard Tschumi.	**4**
Unit II	
7) Parallel Trends in Indian Architecture Revivalist – monumental, religious b) Experimental- Pondicherry, Belgium embassy, IITB, Sriram Centre New Delhi c) Vernacular Influence – Cost-effective concepts.	**6**
NOTE: The architects and ideas mentioned above are indicative only The course teacher may choose the ideas and works of architects to explain with examples	
Scheme for Internal semester assessment (ISA) There shall be 2 ISA exams shall be scheduled as per the COE. And Assignment Submission	
Scheme for End Semester Assessment (ESA) Theory paper for 3 Hrs shall be conducted.	
Text Books NIL.	

References

1. Morgan, Ann Lee & Taylor Colin, “Contemporary Architecture”.
2. Bahga, Bahga&Bahga, “Modern Architecture in India”, 1993, Galgotia Pub. Co.
3. Jon Lang, A Concise History of Modern Architecture in India.
4. Cahrles Jencks, Current Architecture.
5. Dennis Sharp, 20TH Century Architecture, A visual History.
6. James’s steel, Architecture Today.
7. Daniel Libeskind, Countersign, Academy Editions
8. AchyutKanvindeakar,Conceived and edited by Tanuja& Sanjay Kanvinde(Foreword by Balkrishna V. Doshi)
9. Architects & Design ZAHA HADID.
10. The Diagrammatic Basis of Contemporary Architecture. R.E. Somol.
11. Roger Anger Research on Beauty RECHERCHE SUR LA BEAUTE Architecture 1953 - 2008, By AnupamaKundoo.
12. The complete ZAHA HADID, Expanded and Updated. By Thames & Hudson.

Scheme for Semester End Examination (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Unit Number	Instructions
1	**Question Numbers 1, 2 & 3**	I	Solve Any **2** out of **3**
2	**Question Numbers 3, 5 & 6**	II	Solve Any **2** out of **3**
3	**Question Numbers 7 & 8**	III	Solve Any **1** out of **2**

RETURN TO SEM 6

Program: Bachelor of Architecture			**Teaching Hours**
Course Title: Interior Design		**Course Code: 21AATC312**	
L-S-P: 0-2-0	**Credits: 2**	**Contact Hours: 3Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 42 Hrs	**Examination Duration: NIL**		

Course Overview:
The main objective of this course is to provide knowledge related to the solutions for interior design and architecture. The topics that are typically covered include the importance of design, the meaning and definition of design; It mainly covers the study of organizing, managing and planning of the interiors of various establishments. The program often combines integration of anthropometry, ergonomics, space allocation, building services, traffic flow, furniture, fixtures, colors, textures, landscape, applied decoration, materials, surface finishes, surface treatments, and surface modulation in interior design.

Unit I	
Chapter 1: **Introduction to Interior Architectural Design** Concept of Interior Design-Meaning of Interior Design. Definition of interior design, Interior architectural design process, vocabulary of design in terms of principles and elements, Introduction to the design of interior spaces as related to typologies and functions, themes and concepts - Study and design.	06
Chapter 2: **History of Interior Architectural Design** Historic review of Interior design in India. Objectives of Aesthetic Planning Beauty, Expressiveness, Functionalism. Brief study of the history of interior architectural design through the ages relating to historical context, design movements and ideas etc. Brief study of folk arts and crafts with reference to interior design and decoration.	06
Unit II	
Chapter 3: **Elements of Interior Architecture - Enclosing Elements** Introduction to various elements of interiors like floors, ceilings, walls, staircases, openings, interior service elements, focal elements etc., and various methods of their treatment involving use of materials and methods of construction in order to obtain certain specific functional, aesthetic and psychological effects.	10
Chapter 4: **Elements of Interior Architecture – lighting accessories & interior landscaping** Study of interior lighting, different types of lighting their effects types of lighting fixtures. Other elements of interiors like accessories used for enhancement of interiors, paintings, objects-de-art, etc. Interior landscaping, elements like rocks, plants, water, flowers, fountains, paving, artifacts, etc. their physical properties, effects on spaces and design values **Chapter 5** : **Elements of Interior Architecture - Space Programming** Study of the relationship between furniture and spaces, human movements & furniture design as related to human comfort. Function, materials and methods of construction, changing trends and lifestyles, innovations and design ideas. like office furniture, children's furniture, residential furniture, display systems, etc	10
Unit III	
Chapter 6: Interior Design projects for Residential, Commercial and Office Interiors. Areas allocated for the project 500sqm to 1000sqm	08
Chapter 7: Quantity survey and costing of Interior materials and elements Study of the basic quantifying and estimation of the interior design items. Market study investigating the material manufacturers, usage, standards available, and thumb rule-based costing and quantity calculation for an interior design project.	02

Scheme for Internal semester assessment (ISA) Regular Assignments, models. ISA I -20 marks ISA II -20 Term work: Evaluation of Portfolio, assignments by internal examiner-10 marks	
Scheme for End Semester Assessment (ESA) Term work: Evaluation of Portfolio, assignments by the External examiner	
Mode of assessment: Portfolio	
Text Books John Hancock, Time Saver Standards for Architectural Data. Ramsay and Sleeper, Architectural Graphic Standards. Alexander and Mercourt , Design of Interior Environment. PaneroJulious and Zelink Martin, Human Dimension and Interior Space.	
References 1. Ching, F. D. K. (1987). Interior Design Illustrated. New York: V.N.R. Publications. 2. Doshi, S. (Ed.) (1982). The Impulse to adorn - Studies in traditional Indian Architecture. Marg Publications. 3. Kathryn, B. H. and Marcus, G. H. (1993). Landmarks of twentieth Century Design. Abbey Ville Press. 4. Penero, J. and Zelnik, M. (1979). Human Dimension and Interior space: A Source Book of Design Reference Standards. New York: Whitney Library of Design. 5. Slesin, S. and Ceiff, S. (1990). Indian Style. New York: Clarkson N. Potter	

RETURN TO SEM 6

Program: Bachelor of Architecture			**Teaching Hours**
Course Title: STRUCTURES-VI		**Code: 21AATC314**	
L-S-P: 3-0-0	**Credits: 3**	**Contact Hours: 3**	
ISA: 50	**ESA: 50**	**Total Marks: 100**	
Teaching Hours: 42	**Examination Duration: 3 Hours.**		
Unit -I			
Chapter No. 1: Pre stressed concrete Introduction to PSC, historic development of PSC , Terminology, merits and demerits of PSC over RCC, Need of high strength steel and concrete for PSC, Applications of PSC			4hrs
Chapter No. 02 : Analysis of Pre stressed for concentric and eccentric tendons, evaluating stresses due to D.L, L.L,PS and Resultant stresses in the cross section of PSC elements and construction of resultant stress diagrams, Related numerical			5hrs
Chapter No. 03: Losses in PSC, losses in tension and post tension, related numerical			4hrs
Unit - II			
Chapter No.04: Introduction to earthquake resistant system, and effect of an earthquake as a whole on society.			6hrs
Chapter No. 05: Elementary seismology, plate tectonic theory, magnitude and intensity of earthquake and seismic zonal map of India.			6hrs
Chapter No. 06: Earthquake loads on a simple building, vertical load distribution of base shear. Design philosophy of earthquake resistant structures.			5hrs
Unit - III			
Chapter No. 07: Seismic behavior of load bearing structures, in plane and out of plane walls and stiffeners. Shear walls, moment resisting frames and braced frames			6hrs
Chapter No. 08: Plan configuration, vertical configuration and infill wall			4hrs
Chapter No. 9: Introduction and demonstration of seismic analysis of RCC frame structure using software like STAAD.Pro and ETABS			2Hrs
Scheme for Internal semester assessment (ISA) Assignments, ISA 1,ISA 2			
Scheme for End Semester Assessment (ESA) ESA theory exams			
Mode of assessment Theory exams			
Text Books Design of earthquake resistant structures – IIT Kanpur course material. **References** I S 4326, Code of practice for earthquake resistant design and construction of buildings			

Scheme for Semester End Examination (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Unit Number	Instructions
I	Q.No.-1, Q.No.-2, Q.No.-3	I	Solve Any **2** out of **3**
II	Q.No.-4, Q.NO – 5 Q.No.-6,	II	Solve Any **2** out of **3**
III	Q.No.-7, Q.No.-8	III	Solve Any **1** out of **2**

RETURN TO SEM 6

Program: Architecture			
Course Title: Digital Tool III (REVIT)		**Course Code: 21AATC314**	**Teaching Hours**
L-S-P: 0-0-2	**Credits: 2**	**Contact Hours: 4Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 64 Hrs	**Examination Duration: NIL**		

Course Overview: Building Information Modelling is used by architects and other building professionals to help reduce risk obtain insight into how buildings will perform before construction begins, develop better quality designs, and improve project delivery.

Unit I	
1. Building Information Modelling 2. Using General Drawing Tools 3. Editing Elements and exploring the User Interface 4. Working with Basic Modify Tools 5. Imperial and Metric Convention 6. Starting a Design 7. The Basics of the Building Model 8. Loading Additional Building Components 9. Creating Sloped Floors 10. Structural modeling	**21**
Unit II	
1. MEP services modelling 2. Viewing the Building Model 3. Modelling Floors 4. Creating Shaft Openings 5. Developing the Building Model 6. Detailing and Drafting 7. Construction Documentation. 8. Rendering techniques 9. Schedules and quantities 10. Project review & clash detection	**21**
Unit III	
1. Working with Dimensions 2. Working with Text 3. Adding Detail Lines and Symbols 4. Creating Legends Presenting the Building Model and Interiors 5. Documenting the Project 6. Setting Up Sheets 7. Placing and Modifying Views on Sheets 8. Printing Sheets	**22**
Scheme for Internal semester assessment (ISA) Regular Assignments, models. ISA I -20 marks ISA II -20 Term work: Evaluation of Portfolio, assignments by internal examiner-10 marks	
Scheme for End Semester Assessment (ESA) Term work: Evaluation of Portfolio, assignments by the External examiner	
Mode of assessment: Portfolio	

RETURN TO SEM 6

Program: Bachelor of Architecture			Teaching Hours
Course Title:E - Indigenous Knowledge System in Building and Crafts		Course Code:21AATE308	
L-S-P: 0-1-0	Credits: 1	Contact Hours: 2Hrs/week	
ISA Marks: 50	ESA Marks: 50	Total Marks: 100	
Teaching Hours: 28Hrs	Examination: NA		

Course Overview:
Traditional craftsmanship is perhaps the most tangible manifestation of intangible cultural heritage. The course is concerned with the skills and knowledge involved in the craftsmanship rather than the craft products themselves .The elective aims at studying the traditional knowledge embedded in the society in building and local crafts which imparts uniqueness and distinct character to the place. The term indigenous includes in its gamut the tradition of building technique and craft prevailing in the region due to abundant available resources and also the changes it has undergone over a period. Such technical knowledge have undergone changes due to constant experimentation in a given condition and the knowledge has been passed over generations and has been standardized and reproduced through social institutions and cultural mechanism for distancing craft producers. Hence the name systems instead of system which is plural. It is important to understand the knowledge and skills to produce traditional crafts because it is transmitted from one generation to the next. These are traditional and contemporary and living at the same time. It is inclusive as it contributes to social cohesion, encouraging a sense of identity and responsibility. It is representative and valued for its exclusivity or its exceptional values and lastly it is community – based

Unit I	
Chapter 1: Introduction to Indigenous Knowledge Systems in Buildings and Craft Definition, and role of Indigenous Knowledge systems in built environment and crafts.	**6**
Chapter 2: Indian Knowledge systems in Craft and buildings in Karnataka. Understanding the nuances of techniques, experimentation, application and consumption in present through case studies from the region	**8**
Unit II	
Chapter 3: Ethnographic study: Mapping, recording and analysing the embedded values of IKS in buildings craft	**10**
Unit III	
Chapter 4: Report Exploring the application for present day consumption to meet sustainable and resilient built environment	**4**
Scheme for Internal semester assessment (ISA): Stage 1 Review on the identification and research on knowledge system Stage 2 Study of its application and transformation over times Stage 3 Possibility of its application for present day consumption	
Scheme for End Semester Assessment (ESA): Term work: Evaluation of Portfolio and presentation	
Mode of assessment: Final Report	

Text Books
NIL.
References:

1. ICOMOS scientific publications on Intangible Cultural Heritage
2. Principles for the Preservation of Historic Timber Structures - 1999
3. Charter on the Built Vernacular Heritage - 1999
4. ICOMOS Charter – Principles for the Analysis, Conservation and Structural Restoration of Architectural Heritage - 2003
5. ICOMOS Principles for the Preservation and Conservation-Restoration of Wall Paintings- 2003
6. ISC Stained Glass
7. ISC Wood
8. ISC Earthen Architecture
9. Brickwork: Its History, Nature and Behavior
10. The Repair and Conservation of Brickwork
11. Renders and Materials of Fired Clay other than Brick
12. Construction in Earths
13. Repair of Earth Structures
14. Kumarswamy A K, Woodwork
15. Wijesuriya Gamini, Documentation of timber buildings
16. ICOMOS ,Principles for the conservation of wooden built heritage – 2017International Charter for the Conservation and Restoration of Monuments and Sites (The Venice Charter)

RETURN TO SEM 6

<table>
<tr><td colspan="3">Program: Bachelor of Architecture</td><td rowspan="5">Teaching Hours</td></tr>
<tr><td colspan="2">Course Title: E -Sustainable Development of Living Historic towns, villages and cities-II</td><td>Course Code: 21AATE309</td></tr>
<tr><td>L-S-P: 0-1-0</td><td>Credits: 1</td><td>Contact Hours: 2Hrs/week</td></tr>
<tr><td>ISA Marks: 50</td><td>ESA Marks: 50</td><td>Total Marks: 100</td></tr>
<tr><td>Teaching Hours: 28 Hrs</td><td colspan="2">Examination: NA</td></tr>
<tr><td colspan="4">Course Overview: The course aims to provide an insight into the relevance of the historic core of cities and towns and its importance in the development of sustainable towns/villages. It deals with, the city as a universal phenomenon, an expression of mankind’s achievement in social and economic order and, such, the basic concepts for the conservation having a universal application. The course will raise the student’s consciousness, of the value of their cultural heritage before it is lost forever. At the end of the course students will be able to understand and analyze the relationship of culture and nature (linking nature and culture in urban environments; uniting landscape approaches such as cultural, agricultural, historic urban landscape, connections between urban and rural. It will enhance their ability to see ,feel, map and analyze the built environment and its multiple layers and prepare them to take informed design /strategic decisions while working in culturally rich heritage areas. The role of Cultural heritage in achieving overlapping SDG’s with emphasis on SDG11 Target 11.4</td></tr>
<tr><td colspan="3">Unit I</td><td></td></tr>
<tr><td colspan="3">Chapter 1: What is Culture and Cultural Heritage?
Role of Cultural Heritage in meeting Sustainable Development Agenda 2030</td><td>4</td></tr>
<tr><td colspan="3">Chapter 2: Charters
Need for conservation of living cultural heritage sites.
Values Ethics
Venice Charter, Australian Burra Charter, International Charter for the Conservation and Restoration of Monuments and Sites(ICCROM)
ICOMOS Charter for the Conservation of the Historic Towns and Urban Areas
Compilation of the secondary data in the expected framework to support the onsite first hand documentation</td><td>4</td></tr>
<tr><td colspan="3">Unit II</td><td></td></tr>
<tr><td colspan="3">Chapter 3:
HUL Approach and framework

Historic Urban Landscape framework to analyse the cultural landscape.
Inventory of comprehensive/detail cultural resource, natural resources and intangible Heritage
SWOT analysis
Unit III
Chapter 4: Report
Mapping Cultural Landscape
Value Assessment of natural and built environment and drafting outstanding regional/national/universal values
Establishing Significance, Authenticity ,Integrity of the place
Drafting vision document and strategic plan for value based, inclusive and sustainable development of living heritage</td><td>10

10</td></tr>
<tr><td colspan="4">Scheme for Internal semester assessment (ISA):
Stage 1 Review of the archival studies and mapping of identified cultural landscape
Stage 2 Documentation and Analysis of built environment, historical and cultural significanceStage 3 Framing vision document, objectives, development strategy, action plans</td></tr>
<tr><td colspan="4">Scheme for End Semester Assessment (ESA):
Term work: Presentation and draft report</td></tr>
</table>

Mode of assessment:
Final Report

Text Book - NIL.

References:

ICOMOS scientific publications on Intangible Cultural Heritage

1. Christian NorbergShulz, Genius Locii
2. Alexander Christophe ;Urban Pattern
3. Alexander Christopher: Timeless way of Building
4. Feilden Bernard, Guidelines for Conservation, A technical manual
5. Jacobs, J (1961) The Death and Life of Great American Cities, New York, Random House.
6. Lynch,K (1981) A Theory of Good City Form, MIT Press
7. Burgess, J. (1900/1997), “The Muhammadan Architecture of Ahmadabad”, Part1 AD 1412-1520, Plate II, Archaeological Survey of India, New Delhi. [Google Scholar]
8. Gupta, D. (2007), Identification and Documentation of Built Heritage in India , Conservation Briefs, INTACH (UK) Trust, New Delhi. [Google Scholar]
9. Logan, D. and Mackay, R. (2013), “Inventories and heritage management: the Australian experience, heritage inventories”, Conservation Perspectives, The GCI Newsletter, Vol. 28 No. 2, pp. 10-12. [Google Scholar] [Infotrieve]
10. Rodwell, D. (2007), Conservation and Sustainability in Historic Cities , Blackwell publishing, Oxford. [Google Scholar]
11. Thornes, R. and Bold, J. (Eds), (1998), Documenting the Cultural Heritage , Getty Information Institute, Los Angeles, CA, available at: http://archives.icom.museum/objectid/heritage/fore.html (accessed 20 March 2016). [Google Scholar]
12. UNESCO (1972), “Convention concerning the protection of the world cultural and natural heritage”, UNESCO, Paris, available at: http://whc.unesco.org/archive/convention-en.pdf(accessed 23 November 2012). [Google Scholar]
13. UNESCO (2011), “Recommendation on the historic urban landscape”, UNESCO, Paris, available at: http://whc.unesco.org/en/activities/638 (accessed 18 October 2013). [Google Scholar]
14. UNESCO (2013), “Operational guidelines for the implementation of the world heritage convention”, UNESCO, Paris, available at: http://whc.unesco.org/archive/opguide13-en.pdf(accessed 11 September 2013). [Google Scholar]
15. Valetta’s Principles for the Safeguarding and Management of Historic Cities,Towns and Urban Areas. Adopted by the 17th ICOMOS GA, Paris2011

a. Web sites:

ICOMOS,ICCROM,UNESCO Manuals for Historic towns and villages, Charter of Venice

RETURN TO SEM 6

Program: Bachelor of Architecture			Teaching Hours
Course Title: E - Smart and Intelligent Buildings		Code: 21AATE310	
L-S-P: 0-1-0	Credits: 1	Contact Hours: 2	
ISA Marks: 50	ESA Marks: 50	Total Marks: 100	
Teaching Hours: 28	Examination Duration: NA		

UNIT I	
Introduction to Smart and Intelligent Buildings Intelligent building characteristics Features and benefits of intelligent buildings. The anatomy of intelligent buildings. Environmental aspect. The marketplace and other driving forces behind the emergence of intelligent buildings.	**10 Hrs**
UNIT II	
Building automation systems & controls Philosophy, system configuration, system modules, distributed systems, communication protocol and on-line measurements. Fire protection, security and energy management. Control objectives. Sensors, controllers and actuators. Control system schematics system design. Microprocessor based controllers & digital controls. Examples of sub-systems such as: Digital Addressable Lighting Interface (DALI). Modern intelligent vertical transportation systems Sky lobby, double-deck lifts, twin lifts, advanced call registration systems, large scale monitoring systems, applications of artificial intelligence in supervisory control, energy saving measures related to lift systems/escalator systems, other modern vertical transportation systems, such as: gondola systems, materials handling systems, etc. Communication and security systems Voice communication systems, local area network, wireless LAN, Digital TV, CCTV, digital CCTV, teleconferencing, cellular phone system, and CABD. SMATV. Data networking. Short- and long-haul networks. Wideband network. Office automations. Public address/sound reinforcement systems. Digital public address system. Modern security systems.	**10 Hrs**
UNIT III	
Structured cabling systems Characteristics and benefits. Standards, configurations and physical media. EMI/EMC issues, grounding problems. System design. Different Categories of cables. Integrating the technologies and systems The impact of information technology on buildings and people. Shared tenant services. Interaction and integration between building structure, systems, services, management, control and information technology. Application & design software packages.	**08 Hrs**
Scheme for Internal semester assessment (ISA) Presentation of the assignments through power point slides The evaluation shall be through periodic internal reviews. The students have to present the entire semester work for assessment along with all the hardcopy assignment. Term work Evaluation of final portfolio, assignments by internal examiner	
Scheme for End Semester Assessment (ESA) Term work: Evaluation of Portfolio and assignments by internal and external examiners/Viva	
Mode of assessment : Portfolio, Assignments, Presentations	
Text Books : 1. Clements-Croome, Derek, Intelligent Buildings: An introduction, Routledge, 2014 2. Shengwei Wang, Intelligent Buildings and Building Automation, Spon Press, 2010 3. Jim Sinopoli, Smart Building Systems for Architectures, Owners and Builders, Elsevier, 2010 4. P. Manolescue, Integrating Security into Intelligent Buildings, Cheltenharn, 2003 5. A. Dobbelsteen, Smart Building in a Changing Climate, Techne Press, 2009 6. D. Clements-Croome, Intelligent Buildings: An Introduction, Routledge, 2014 7. A. Oliviero, Cabling [electronic resource]: The Complete Guide to Copper and Fiber optic Networking, John Wiley & Sons, 2014 8. W.T. Grondzik, & A.G. Kwok, Mechanical and Electrical Equipment for Buildings, Wiley, 2015	

RETURN TO SEM 6

Program: Bachelor of Architecture			
Course Title: E-Urban Legislation, Policies and Economics		**Course Code: 21AATE311**	**Teaching Hours**
L-S-P: 0-1-0	**Credits: 1**	**Contact Hours: 2 Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 28 Hrs	**Examination Duration: NA**		
Unit I			
Chapter 1: Urban Legislation: Introduction Land Acquisition Act, 73rd and 74th Constitutional Amendment Act, SEZ / SIR Act, Building Byelaws and Regulation, TDR, Conservation Charters, CDPs, National Building Code, RERA Act, Architects Act 1972			**12**
Unit II			
Chapter 2: Urban Policies UNESCO , ICOMOS, Parking Policy, Hawkers Policy, Sustainable Goals, National Urban Policy Public space design policy, Public Transport Policy, Globalization, Cosmopolitan			**10**
Unit III			
Chapter 3: Urban Economics Socialism, Capitalism and Communism			**06**
Scheme for Internal semester assessment (ISA) Reviews and Assignments			
Scheme for End Semester Assessment (ESA) Portfolio of Assignments Submission			
Mode of assessment: Portfolio Assessment by External			
Text Books NA. **References** Government Gazetteer, notifications and publications Internet can be the tool for seeing the websites of the above topics			

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Program: Bachelor of Architecture			Teaching Hours
Course Title: E- Analyzing Architecture		Course Code: 21AATE312	
L-S-P: 0-1-0	Credits: 1	Contact Hours: 2	
ISA Marks: 50	ESA Marks: 50	Total Marks: 100	
Teaching Hours: 28	Examination Duration: NA		
Unit-I			
Architecture as identification of place, basic elements and modifying the elements.			**10**
Unit-II			
Architecture as doing more than one thing, using things that are there and using primitive place types.			**10**
Unit-III			
Architecture as making frames and establishing the relationship of space to structure.			
Sessional Work (Internal semester assessment) Evaluation of assignments in three stages			**8**
Scheme for Semester End Assessment (ESA) Evaluation of assignments			
Mode of assessment : Evaluation of Portfolio, assignments by internal and external examiners			
References : Architectural design books, periodicals & websites			

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Program: Bachelor of Architecture			Teaching Hours
Course Title: E- Barrier Free Architecture		Course Code:21AATE313	
L-S-P: 0-1-0	Credits: 1	Contact Hours: 2	
ISA Marks: 50	ESA Marks: 50	Total Marks: 100	
Teaching Hours: 28	Examination Duration: NA		

Course Objectives:
To understand and inculcate skills required for designing for barrier free built environments for persons with disabilities and elderly persons. Techniques involved in making such provisions.

Unit-I	
Introduction to Provisions of persons with Disabilities Act, 1995, Type of disabilities, National Policy for provisions for elderly persons, Concept of equal opportunity, human rights, social justice and empowerment of physically challenged persons. Initiatives at global and International level for protection of rights of disabled and also elderly person. American disabilities Act 1990 etc.	8 Hrs
Unit-II	
National Institutes, agencies and professional bodies involved in disabled welfare, associated norms and standards thereof. Design principles in Architecture for creating environments friendly for various types of physically challenged persons. Educational Institutions, Hospitals, Transportation terminals such as bus, railway stations and airports for barrier free spaces. Study of Standards as given in TSS, TCPO, CPWD ADA etc., and others	12 Hrs
Unit-II	
Provisions in public spaces and site planning – parks, play grounds, public transportation, parking lots, Details of sidewalks, road intersections, access to public toilets. Provisions in design of public buildings –Details in, ramps, guide rails, lifts, dimensions of wheel chairs, accessibility in public buildings, Signage, audio visual facilities etc. Design of Toilets and interiors spaces for use of physically challenged.	12 Hrs

Scheme for Internal semester assessment (ISA)
Reworking on Previous semester Design Projects to design barrier free spaces.

Scheme for Semester End Assessment (ESA)
Site planning: 30%, Design of Built spaces: 30%, Design of details:40%

Mode of assessment : Evaluation of assignments by internal and external examiners

References :

1. MichealJ.Bednar. “Barrier Free Environments”, Dowden, Hutchinson and Ross, Ive 1977.
2. Ministry of Urban Affairs and Employment. Central Public Works Department, India,“Guidelines and Space Standards for Barriers Free Environment for Disabled and Elderly Person, 1998.
3. Unnati. “ Design Manual for a Barrier – Free Built Environment” , Handicap International, December, 2004
4. Building without barriers for the disabled, Harkness,

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VII SEMESTER

Program: Bachelor of Architecture			
Course Title: Architectural Design VII (CAMPUS PLANNING)		**Course Code: 21AATC401**	**Teaching Hrs**
L-T-P: 0-7-0	**Credits:7**	**Contact Hours: 10 Hrs.**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours:140Hrs	**Examination Duration: NA**		

Course Overview:

This course comprehensive exploration of architectural design principles as applied to Master Planning or Campus planning. Students will develop an understanding of design as a process of planning principles, space standards, and formulation of design program, evolution of design criteria and development of design of buildings in built environment. Students will be enabled to integrate design with context, history, theory, building technology and material science in a more informed way. Also understand complexities involved in designing functional, visually appealing and sustainable campus environments.

Course Contents:

The Campus planning design learnings and issues to be addressed are:

- To deal with land parcels of land and carry out the Master Planning while dealing with the aspects like Zoning, Movement, Orientation, Climate etc.
- Sustainable Campus Planning principles with respect to Land Utilization, Utilities Planning, Water Management etc.to create environmentally friendly campuses.
- Energy efficient building design with passive design strategies of energy efficiency and integration of renewable energy systems in campus planning.
- Relationship between Built and Unbuilt Spaces and integrating them.
- Human Centric design parameters. Designing for inclusivity, accessibility and wellbeing.
- Defining the nature of engagement with the city, through the articulation of the program and its relationship with the context.
- Develop design concepts that address functional requirements and user needs.
- Discovering how the building can express Scale, Proportion, Balance and other fundamentals of architectural design through an appropriate Architectural Language or Expression.
- Integration of function and movement, climate and sound, structure and services into group or cluster of Buildings.
- Developing Understanding about the Critical Role of Landscape Design and site planning. In the process learn about various aspects of landscape like horticulture, irrigation systems, hardscape materials etc.
- To Create an Understanding regarding the role of institutions as a symbolic landmarks and inculcating knowledge of building making as Edifice.
- Universal Design to be incorporated in Master Planning and Building Design.
- Learning to design elements like street furniture, street lighting, signage, gate design and compound wall design.
- Strategies for designing flexible and adaptable campus spaces.

The topics to be covered as design problems may include:
• Institution of learning – colleges with its various departments such as medical, engineering, law, business, music, and dance colleges, vocational training institutes etc.
• Institutions of life such as hospitals, reformatories and rehabilitation institutes for the disabled.
• Institutions of research in various disciplines.
• Local/legal institutions such as the high courts, secretariat, development authorities, directorates etc.

Necessary theoretical inputs to be given highlighting the norms and design issues. The topics covered as design projects will have to be covered by the studio faculty members through lecture/slide show session, case studies and site visits.

Unit I	
Pre Design – Introduction to Campus Planning, History and Theories of Campus planning, morphology and spatial organization, Analysis of Campus Design principles, typologies and case studies. **Site analysis / Concept Development:** Site plan, Site analysis, site synthesis and zoning, Metaphors in Campus planning design process and formulation of design brief and design program, conceptual sketches, design development. Site assessment techniques for sustainable	**40 Hrs**

design. **Master plan Design Development stage:** To understand spatial structuring as a set of logical operations after an analytical understanding of the site, surroundings, program and intent expressing diversity of program and its resulting spatial variety and the relationship between the built and the unbuilt established through movement systems, linkages and nodes etc.	
Unit II	
Secondary Design Development stage: Informal structuring, Architecture is an integrative discipline. Establishment of a structure enables reverse integration with other subjects where the students look beyond their studio offering a mechanism to observe the surroundings and document it, understand history and theory analytically, integrate design with building construction, climatic, environmental and material science in a more informed way. The design exercise shall focus on ideas of scale, engagement (social, economic, political, and environmental), hierarchy, public/private space, and challenge the students to reflect on these as part of the design development. The emphasis should be to establish these larger goals as part of the discussion on the nature of an institution. The project and design development should focus on integrating Sustainable Campus design in every aspect and process possible, with an emphasis on reducing thermal locals and integrating ventilation, insulation, thermal mass, shading, cool roofs, passive/natural cooling and low energy, low-carbon active cooling technologies; local materials as much as possible; sustainable systems such as storm water harvesting, water recycling and reusing, waste management systems and renewable energy systems and above all response to site context and existing informal systems.	**60 Hrs**
Unit III	
Finalization of design: Presentation (computer aided) and rendering **Esquee:** Given design topic which is part of the Campus Master Plan to be completed within the time limit. **Model Making:** Final three-dimensional model/views Parametric design with the powerful visual programming languages.	**40 Hrs**
Text Books: NIL	
Reference Books: 1. Architecture Today 2. Concept of the Manifest. 3. Projects of Various Architects of similar nature. 4. Campus design in India – Kanvinde & Miller 5. Campus Planning _ Richard Dober. 6. Urban Design. The Architecture of towns and cities. –Paul Sprereingen. 7. Exterior design in Architecture __ Ashihara Toshinibu 8. Modern Language of Architecture __ Bruno Zevi. 9. Modern Movements in Architecture __ Charles Jencks 10. Language of Post – modern Architecture - Charles Jencks 11. Complexities and contradictions in Architecture – Robert Venturi 12. Architectural Composition. –Rob Krier. 13. Pattern Language Christopher Alexander. 14. Town Design –Fredrick Gibberd Alexander 15. Various monographs and periodicals	

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Program: Architecture			
Course Title: Building Construction & Materials-VII		**Course Code: 21AATC402**	**Teaching Hours**
L-S-P: 0-4-0	**Credits: 4**	**Contact Hours: 6Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 84Hrs	**Examination Duration: Viva Voice**		
Course Overview: To familiarize the students with the advanced forms of construction like folded plate structures, shells, geodesic domes, Tensile and compressive structures, pneumatic structures, space frames, various system building components, pre-stressed and pre-tensioned building components, curtain wall and structural glazing with materials like admixtures, sealants.			
Unit I			
Chapter 1: Structural Forms: Introduction to folded shells, hyperbolic, paraboloid structures, structural behavior, materials, spans and architectural applications.			**18**
Chapter 2: Geodesic Domes: Introduction to geodesic domes, structural behavior, types, materials, spans and spaces and their architectural applications..			12
Chapter 3: Tensile and Compressive structures. Introduction, structural behavior, materials, spans and application and its form.			12
Unit II			
Chapter 4: Pneumatic Structures. Introduction, structural behavior, materials, spans, architectural application and its futuristic scope.			12
Chapter 5: Space frame. Introduction to structural behavior, materials, spans and its architectural applications.			12
Unit III			
Chapter 6: System building components: Modular approach, materials, manufacturing erection and architectural applications.			12
Chapter 7: Pre-stressed and post-tensioned building components: Concepts, materials, construction and applications.			06
Scheme for Internal semester assessment (ISA) Regular Assignments, models. Term work: Evaluation of Portfolio, assignments by internal examiner			
Scheme for End Semester Assessment (ESA) Term work: Evaluation of Portfolio, assignments by the External examiner through VIVA VOICE			
Mode of assessment: Portfolio			

Text Books

1. NIL.

References

1. "Construction Technology" Volume-I by R Chudley, ELBS& Longman group Ltd.
2. Barry R, "The construction of buildings", Vol-2, 5th Edi, East West Press, New Delhi 1999.
3. BindraS.P and Arora S.P, Building Construction-Planning Techniques and Method of Construction, 19thedi, DhanpatRai Pub, New Delhi, 2000
4. "Building Construction" by Janardhan Jha, Khanna New-Delhi.
5. RangawalS.C ,"Building Construction" 22nd Edi, charotar Publishing house, Anand, 2004
6. "Building Materials" by S K Duggal, IBH New Delhi.
7. Sushil Kumar T.B of Building Construction 19thedi, Standard Pub House, New Delhi, 2003.
8. ChowdharyK.P. Engineering Materials used in India, 7th Edi, Oxford and IBH Pub ltd New Delhi, 1990.
9. Building Construction Hand book : By R Chudly& R Greeno, Bullerworth Heinemann, New-Delhi.

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Program: Architecture			
Course Title: Research Methodology Dissertation		**Course Code: 21AATC403**	**Teaching Hours**
L-S-P: 0-3-0	**Credits: 3**	**Contact Hours: 4Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 42 Hrs	**Examination Duration: Viva Voice**		

Course contents: The objective of this course is to orient the students to gain a strong theoretical analytical base for a well-structured research. The course shall enable students to conduct research, analyses and write a research paper on a topic of their interest.
Students may choose a topic related to Architecture and allied subjects. Emphasis must be on critical understanding, logical reasoning and structured writing.

Unit-I:	
Inculcate critical thinking skills by undertaking methods for deeper understanding through literature review, comparative analogy and involvement of qualitative and quantitative data collection and analytical techniques. Understanding of the nature and function of research, meaning of research in the field of architecture, pure and applied research, traditional and potential areas/types, and stages of research Research methodology, various techniques of data collection in general, specific techniques in architectural research, methods of analysis stage, communication of research reporting, the structure of a report, the necessity for the development of writing skills. Understanding the concept of neural network and social cognition, semantics and semiotics, anthropological and ethnographic research.	15
Unit-II	
Technical data about formal writing, the use of visuals, the qualities of research, the use of primary and secondary references, bibliography, notation, cross reference etc. Issues of selective reference. Methods of writing draft reports before finalization. Research in the fields of environment, community structure, architectural history and theory, urban structure, building type studies, etc. Research ethics and its importance. Concept of confidentiality, anonymity, informed consent and intellectual property rights.	15
Unit-III	
Drafting a research paper, abstract, key words, background and justification, gap analysis, framing the right research question, formulating methodology, data collection and analysis, inferences, conclusion and bibliography. The process of publication, identification of correct journal, double blind peer review, iterative stages of correction, referencing, plagiarism and publication ethics.	12
Sessional Work (Internal semester assessment) Students are expected to present the progress of the study at various stages of the semester. Students will be asked to prepare research proposals, which will be discussed and modified.	
Scheme for Semester End Assessment (ESA) Final assessment of the students' work may be based on written Paper as well as oral communication. However, greater weightage may be given for writing skills and research content of the study.	
Mode of assessment: By the end of the semester, students are expected to submit a written paper of approximately 3500 words. Standard referencing conventions and technical writing norms must be adhered to. Students are expected to present the progress of the study at various stages of the semester.	

References:

1. Murray, R. Writing for academic journals. Berkshire: Maidenhead, Open University Press. (2005).
2. Borden, I. and Ray, K. R. The dissertation: an architecture student's handbook. (2006).
3. Anderson, J. and Poole, M. Thesis and assignment writing. Brisbane: John Wiley. (1998).
4. Architectural research methods; Linda Groat& David Wang, John Wiley and sons, New York
5. Visual research methods in Design; Henry Sanoff, Van Nostrnad Reinhold, New York

Architectural research; Snyder James C; Van Nostrnad Reinhold

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Program: Architecture			
Course Title: STRUCTURES – VII		**Course Code:21AATC404**	**Teaching Hours**
L-S-P: 3-0-0	**Credits: 3**	**Contact Hours:3Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 42 hrs.	**Examination Duration: 3Hrs**		
UNIT 1			
Chapter No.01 1. Case Studies-Study of ongoing Residential and public RC frame building structures by site visits. 2. Collecting data regarding the type of structural system, structural configurations, arrangement of columns and beams for the different floors. 3. Critical analysis and interpretation of data at studio, for the possible alternative structural system with column position and beam layout			8 hrs.
Chapter No.02 Design of structures 4. Load calculations of continuous beams , 1-way continuous slab, 2-way continuous slab, uni axial column, isolated footings for residential and multi-story public buildings			8 hrs.
UNIT 2			
Chapter No.03 Design of structures Preparing a RC structural system for a proposed architectural design of a residential, commercial and public building structures. Preparing column positions, beam layout as per requirements of all floors and parking arrangement.			10 hrs.
Chapter No.04 Preparing various options of foundations can be provided for the proposed building structure. Design of typical isolated column foundation and pile foundation for the estimated axial loading Design of typical columns for the estimated gravity load subjected to axial load and unit axial moment. Design of typical beam and slab elements for the estimated loading			8 hrs.
UNIT 3			
Chapter No.05 Structural detailing - Preparing the structural drawings of layout of columns, foundation and retaining walls. Typical floor structural drawing with reinforcement details			8 hrs.
Scheme for Internal semester assessment (ISA) Assignments, ISA 1, ISA 2			
Scheme for End Semester Assessment (ESA) Theory Exams			
Text Books 1. Dr. Ram Chandra, Design of Steel Structures, Vol I, 10th ed. Standard book house, New Delhi, 1999 2. S. Ramambrutham and R Narayanan, Design of Steel Structures, 4th ed. DhanpatRai and Sons, Delhi 1995			
References 1. S.R. Karve and V. L. Shah, Limit state theory and design of reinforced concrete structures publications Pune 2. IS : 456- 2000 Code of practice for plane and reinforced concrete. 3. Structures Martin Bechthold, Daniel L Schodek. PHI Learning pvt. Ltd			

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Program: Bachelor of Architecture			
Course Title: Urban Studies		**Course Code: 21AATC405**	**Teaching Hours**
L-T/S-P: 2-0-0	**Credits:3**	**Contact Hours: 3**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 42	**Examination Duration: 3 hrs**		
Course Overview: The course will prepare the students with basic concepts of urban design and planning, understanding zoning and density, land use planning and its importance in urban planning, skills to undertake survey and analysis of data and develop understanding of contemporary principles and theories of urban planning and urban design			
Course Contents			
Unit I			
1. Introduction To Human Settlements Elements of Human Settlements, their functions and Linkages – Anatomy & classification of Human Settlements Historical development of a City as a product of socio-cultural, economic and political ideologies, Urban settlements and rural settlements: Origin, evolution and growth of settlements, characteristics, relation and differences. Principles of settlement planning in various historical periods like Mesopotamian, Egyptian, Greek, Roman, Medieval, Renaissance and Neo-classical, Cities of Vedic period, Indo- Aryan cities, Indus valley, typical Dravidian temple city. Cities of Mughal period and British-Colonial period.			**4**
2. Introduction To Urban Design Urban morphology and components of urban design and terminologies, city as patterns; diagrams; spaces and ideas (organic; grid; political functional-secularist-socialist diagrams, skyline; city edge; urban division; public spaces- various typologies including street, parks and water bodies (network of blue and greens)			**4**
Theorizing urban form: Utopias; ideas of Gordon Cullen, Jane Jacobs, William Whyte, Mumford, Kevin Lynch (Good City Form; Image ability and Memory), New Urbanism of Krier; Public and Private domains; Suburbs and periphery; Privacy, Territoriality and Proxemic theory; Defensible spaces; concept of eyes on the street and concept of grain, tissue and texture.			**4**
3. Planning Concepts: Role and contribution of the following towards contemporary town planning Geddesian Triad and outlook Tower by Patrick Geddes, City Beautiful by Daniel Burnham, Garden city by Ebenezer Howard, Neighbourhood by C.A.Perry, Radburn by Henry Wright and Clearance stein, Ekistics by CA Doxiadis, , Radiant city and Chandigarh by Le Corbusier, F.L..Wright,			**6**
Unit II			
4. Contemporary Issues In Urban Planning And Housing: Contemporary problems of settlements, Environmental impact of unplanned growth. Socio-economic aspects of urban housing and problems of slums, rationale of urban regulatory controls. Urban redevelopment and renewal, urban traffic and transportation planning, URDPFI norms.			**4**
Chronological understanding of housing and housing schemes pertaining to development in India, National Housing policy, concept of demand, supply and housing shortage, significance of HUDCO, HDFC and other agencies aiding housing, understanding of slum up-gradation schemes, incremental housing and site and services, understanding of contemporary existing housing schemes like PMAY (Pradhan Mantri Awas Yojana) etc.			**6**
5. Urban And Regional Planning Influence of socio-economic factors in the development of human settlements, Classification of settlements based on population, functions, locations, Municipal status. Town and its land uses, Land use planning concepts, graphical representation and colour coding of Land use, densities of a town, Principles, Advantages and types of Zoning. Scope and purpose of Perspective Plan, Regional Plan, Development Plan, Local Area Plan, and Concept of Participatory approach in planning process.			**4**
Unit III			

6.Town Planning Techniques Data Collection Techniques, Types of Surveys, Applying Carrying Capacity for Urban and Regional planning, Threshold Analysis – Factors taken into consideration to assess the most suitable land use & weighted overlay of Land suitability, Projection Techniques - Population Projection, Plan formulation through Remote Sensing & Geographic Information System, Central business district, other business districts, urban nodes and fringes **7. Emerging Trends In Urban Planning And Design** Globalization and its impact on cities: Self Sustained Communities, Special Economic Zones (SEZ), Transit Oriented Development (TOD) and Integrated townships, New Urbanism, Smart growth, Sustainable cities, Intelligent cities, Livable cities, Resilient cities, Smart Cities, Global city, Eco city, Compact city, Vertical urbanism.	**6** 4
Scheme for Internal semester assessment (ISA) Term work: Evaluation of Portfolio, assignments by internal examiner, theory exam Scheme for End Semester Assessment (ESA) External examination-3 hrs	
Mode of assessment: Portfolio& Theory exam.	
Text Book 1. Bandyopadhyay Abir: Town planning 2. Gallion A. B. The Urban Pattern 3. Hiraskar Town planning in India	
References 1. Chapin III F. Stuart, Kaiser Edward J. and Godschalk David R., Urban Land Use Planning, University of Illinois Press, Illinois, 1995 and onwards. 2.Dutt, Binode Behari, Town Planning in Ancient India, Gyan Books Pvt. Ltd., Delhi,2009 3. Gallion Arthur and Eisner, The Urban Pattern: City Planning and Design, CBS Publisher, New Delhi, 2005 and onwards. 4. Lynch Kevin, The Image of the City, Harvard University Press, Harvard, 1960 and onwards. 5. Correa Charles, Housing and Urbanization, Thames & Hudson, London,2000 6. Rossi Aldo, The Architecture of the City, The MIT Press, New York, 1984 and onwards. 7. Keeble Lewis, Principles and Practice of Town and Country Planning, The Estates Gazette Ltd., London,1969 8.Gordon Cullen Thomas, The Concise Townscape, Architectural Press Routledge,1961 and onwards 9.Hough Michael, Cities and Natural process: A Basis for Sustainability,Routledge,1995 and onwards	

Scheme for Semester End Examination (ESA)

UNIT	8 Questions to be set of 20 Marks Each	Chapter numbers	Instructions
I	Question Numbers 1, 2 & 3	I, II and III	Solve Any 2 out of 3
II	Question Numbers 4, 5 & 6	IV and V	Solve Any 2 out of 3
III	Question Numbers 7 & 8	VI and VIII	Solve Any 1 out of 2

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Program: Bachelor of Architecture			Teaching Hours
Course Title: Green Building Studio		**Course Code: 21AATC407**	
L-S-P: 0-2-0	**Credits: 2**	**Contact Hours: 3 Hrs./week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 42 Hrs.	**Examination Duration: Term work**		

Course Overview - The Green Building Studio course, is designed to equip students with the fundamental concepts and practical skills necessary for green building design and assessment. As the architectural industry moves towards sustainable and environmentally friendly practices, this course provides a comprehensive understanding of the global green design movement, with a particular focus on its implementation within India.

Unit I	
Chapter No. 1. Background on Green Design movement around the world and Introduction to Green Building Design. Green Building Movement in India; various organizations driving the movement and the current trends	**3 hrs**
Chapter No. 2. Introduction to GRIHA (The Energy and Resource Institute, New Delhi) and IGBC (Indian Green Building Council) rating tools with detailed presentation of both rating tools step by step and to cover all the credit points.	**3 hrs**
Unit II	
Chapter No. 3. Hands-on guidance on Green rating for Design project Phase 1 Analyze using sample Architectural design project previously done by students	**9 hrs**
Chapter No. 4. Hands-on guidance on Green rating for Design project Phase 2 Analyze using sample Architectural design project previously done by students	**9 hrs**
Chapter No. 5. Hands-on guidance on Green rating for Design project Phase 3 Analyze using sample Architectural design project previously done by students	**6 hrs**
Chapter No. 6. Hands-on guidance on Green rating for Design project Phase 4 Analyze using sample Architectural design project previously done by students	**6 hrs**
Unit III	
Chapter No. 7. Final Evaluation and Assessment	**6 hrs**
Scheme for Internal semester assessment (ISA) ISA 1: Case study assignments, rating tool study and feasibility report, review and discussions ISA 2: 3 Reviews and discussions, 2 Submissions Final Submission : Final Portfolio	
Scheme for End Semester Assessment (ESA) Final Portfolio submission	
Mode of assessment: Assessment of Final Portfolio	

VIII Semester

Program: Bachelor of Architecture			**Teaching Hrs.**
Course Title: Architectural Design VIII (Urban Insert)		**Course Code:21AATC408**	
L-S-P: 0-10-0	**Credits: 10**	**Contact Hours:15 Hrs./week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 210 Hrs.	**Examination: NA**		

Course Overview: To understand the city under study, read the issues in a given area after a methodical analysis and propose housing /urban design/ campus design solutions. Students will demonstrate through design their understanding of urban issues relating to the built environment.

Unit I	
Introduction to ideas and concepts in Urban Design. Understanding complexities of urban dimensions, Urban Networks such as Urban greens, Pedestrian connections, Traffic & Transportation, Local and regional architectural language & expression. Socio Economic, Cultural and Physical context. Congregation of large number of diverse and unknown people. Issues related to the growing problems of urban areas. Note: Short field study tour for historical and modern buildings, including site visits. The above said task will be carried out in the holidays before the commencement of the semester and will take approximately seven to ten days.	**45 hrs**
Unit II	
To explore the future development. Emphasis shall be on the design with relation to the contextual environment, heritage, traffic, planning controls and impact analysis. An understanding of the architectural implications of such development scheme should lead to insights in the formulation of urban design controls and urban planning policy. To develop ability to design building as a urban insert by understanding the influence of the building on and of the immediate & distant surrounding in relation to both traffic and planning control. Handle circulation of large member of people and various modes of Transport. Design Outline: Design of a multi-functional complex programmatic building as an insert at a settlement level. Application of Theory of Architecture, Material and Structural Systems, Environmental Sciences and Behavioral Sciences.	**45 hrs**
Unit III	
Understanding the various contextual layers in the selected area of a particular city like origin and genesis, socio-economic profile, transport network, demography, activity pattern and infrastructure and formulating contextual solutions addressing SDG goal 11 (inclusive, safe, resilient and sustainable cities) like skill development and empowerment centre, recycling and circular economy based projects, pedestrian and child friendly public spaces, community housing, spaces pertaining to art and cultural rejuvenation comprising around 3000 to 5000 sqm in a site area limiting to 5 acres.	**120 hrs**
Scheme for Internal semester assessment (ISA): Reviews 1-5, along with site models. Evaluation of Progress of work by the Internal examiner.	
Scheme for End Semester Assessment (ESA): Term work: Evaluation of Portfolio, assignments by the External examiner,	
Mode of assessment: Portfolio.	

References:

1) T.S.S. for Urban Design; Mc Graw Hill 2003
2) Darek Thomas; Architecture and the Urban Environment; Architectural Press 2002
3) The Phaidon Atlas of 21st Century; World Architecture; Phaidon Publication 2008

4) The 20th Century World Architecture; Phaidon 2012
5) Kevin Lynch; Site planning 3rd Edication 2012
6) Bacon N. Edmund. Design of cities. Penguin Books, New York 1976.
7) Krier Rob, Urban Space 3rd Ed, Academy Editions, London 1984.
8) Krier Rob,Town Spaces(Contemporary Interpretations in Traditional Urbanism),Birkhauser-Publishers for Architecture
9) Mumford Lewis City in History, Its origin transformation and its prospects.
10) Spreiregen Paul ,Urban Design: The Architecture of Towns and cities
11) Alexander Christopher ;Urban Pattern
12) Alexander Christopher: New Theory of Urban Design
13) Alexander Christopher: Synthesis of Form
14) Alexander Christopher: City is not a Tree
15) Rappoport Amos: Human Aspect of Urban Form
16) Rappoport Amos: History and Precedent of Environmental Design
17) Rappoport Amos: House Form and Culture
18) Rappoport Amos: Meaning of the built environment
19) Geoffrey Broadbent: Design in Architecture
20) Geoffrey Baker: Design strategies in architecture: An approach to analysis of form
21) Lynch Kevin: City Sense
22) Lynch Kevin: Image of the City

Reference Reading book

1) MoughtinClif, Urban Design, Method and Techniques. Architectural Press
2) Lawson B,(1980)How Designers Think, London Architectural Press
3) De Bono,E(1977) Lateral Thinking, Harmondsworth: Penguin
4) Jane Jacob, the Death and Life of Great American Cities (1961) New York, Random House.
5) Rudi & Academy of Urbanism, Place Making 2009
6) Atkins, Hinkley Town Center Renaissance Master Plan
7) Bartlett School of Planning, The value of design (CABE online, 2002)
8) English Heritage/CABE, Building in context (2001)
9) Robert Cowan (ed.), Urban design guidance (Urban Design Group, 2002)
Robert Cowan, Place check - a user's guide (Urban Design Alliance)

RETURN TO SEM VIII

Program: Bachelor of Architecture			**Teaching Hrs.**
Course Title: Pre -Thesis		**Code: 21AATC409**	
L-S-P: 0-4-0	**Credits: 4**	**Contact.Hours:6 Hrs./week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 84 Hrs.	**Examination: Viva voce**		

Course Overview:
This is to put the **problem** in context and describe the precise issue through research,
Through a process of conceptual exploration, research and execution of the **thesis project.**
The student will select one type of building complexes. Identification of design issues based on literature studies, case studies and users' feedback. Formulation of goal and research methodology. Selection of site and site analysis. It is seen as a culmination of the development of the student's knowledge, attitudes and skills over the course of studies of Architecture. Student is expected to develop a subject of his or her own choice and to demonstrate the ability to use effectively the tools of independent investigations and judgment to evolve design criteria. The application of these may be original design or research oriented work.

Unit I	
Chapter 1: Problem statement Thesis project selection. Identify your research area/ problem, and your ideas for narrowing to a specific topic within this area.	**8**
Chapter 2: Background Research Background research should take a thorough look at the work that has been done in your area already. Literature review covering diverse aspects, trends, climatic analysis and other relevant dimensions of the project	**16**
Unit II	
Chapter 3: Program formulation Program formulation, Include your research plan, methodology, and relevant data of your work thus far. Include a brief summary of background research and how it led you to this direction; Space Programming, Design Criteria and concepts.	**12**
Chapter 4: Site selection Site analysis frame work, Site Planning, Selection of the site for the proposed thesis project	**12**
Unit III	
Chapter 5: Report Compile a draft report about the selected thesis project. Submission of project report followed by Jury evaluation.	**8**
Scheme for Internal semester assessment (ISA): Reviews 1-5, along with site models. Evaluation of Progress of work by the Internal examiner	

Scheme for End Semester Assessment (ESA):
Term work: Evaluation of Final Report by the External examiner through Viva Voice

Mode of assessment:
Final Report.

Text Books

1. NIL.

References

1. Iain Borden, The Dissertation, 2005
2. Thesis & Dissertations –A guide to Planning, Research & Writing
3. Council of Architecture, Archive of Architecture Thesis
4. Architecture Journals

RETURN TO SEM VIII

Program: Bachelor of Architecture			
Course Title: Professional Practice I		**Course Code: 21AATC410**	**Teaching Hours**
L-S-P: 3-0-0	**Credits: 3**	**Contact Hours: 3 Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 42 Hrs	**Examination Duration: 3 Hrs**		
Unit I			
Chapter 1: Architect and his Practice: Profession of architecture, difference between Profession, Trade and Business, duties and liabilities to the profession, Profession and Practice of Architecture - Types of Architect's Office – proprietorship, partnership and combined concerns, advantages and Disadvantages of each, secure or building clientele and projects, Scale of fees, and contract between client and architect. Office Management - Office administration and accounts of firms, Architectural Competitions – Guidelines of COA, Procedure of conduct of Competitions, Empanelment, Expression of Interest. Supervision by Architects: Site Visits, Meaning and Purpose of Supervision, Remarks on Site Book, Site Meeting and Bill Checking.			**10**
Chapter 2: Council of Architecture (COA) and The Indian Institute of Architects (IIA) Council of Architecture (COA), Code of Professional Conduct, Architect's Act 1972, The Indian Institute of Architects (IIA), Conditions of engagement, Scale of Professional Charges, Mode of Payment, Taxation in the profession, Architect's responsibilities and liabilities towards client.			**06**
Unit II			
Chapter 3: Tenders. Introduction to Tenders. Tender documents and its content, Types of Tenders, advantages and disadvantages of each type, Suitability to various projects, Tendering Procedure, Architect's Role in Tender process, Tender Notice, Earnest Money Deposit, Mobilization Fund, Security Deposit, Retention Amount, Rebate in Tenders, Mobilization Fund, Contractor's Profit, Work Order, and Letter of Acceptance.			**08**
Chapter 4: Contracts: Definition, General Principles, Types of Contract, Importance of Articles of Agreement and Appendix, Definition of various terms and their scope. Architect's power and duties with respect to execution of contract conditions, Contractor's Duties and Liabilities under contract. Problems arising out of contract – Virtual completion and defects liability, liquidated and unliquidated damage, Penalty Bonus, Extension of Time, Non tendered items, extra and additional work, variation, prime cost and provisional sum, fire insurance and conditions of claim.			**08**
Unit III			
Chapter 5: Valuation – Introduction, Essential Characteristics, Value and its classification, purpose of Classification, Market Rate and its essential Characteristics, methods of valuation, standard rent, cost of construction.			**10**

Scheme for Internal semester assessment (ISA) ISA 1 and ISA 2 – Theory Examination ISA 3 - Assignments	
Scheme for End Semester Assessment (ESA) Theory Exam	
Mode of assessment : Theory Examination and Assignment	
Text Books NA.	
References 1. Professional Practice – Dr. Roshan Namavati 2. Architectural Practice and Procedure – Ar. V S Apte 3. Architectural Practice in India – Ar. Madhav Deobhakta 4. Professional Practice – Dr. K G Krishna Murthy and Prof S V Ravindra 5. The Business of Architectural Practice – Derek Sharp	

Scheme for End Semester Assessment (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Unit Number	Instructions
1	Question Numbers 1, 2 & 3	I	Solve Any 2 out of 3
2	Question Numbers 3, 5 & 6	II	Solve Any 2 out of 3
3	Question Numbers 7 & 8	III	Solve Any 1 out of 2

RETURN TO SEM VIII

Program: Bachelor of Architecture			
Course Title: Construction and Project Management		**Course Code: 21AATC411**	**Teaching Hours**
L-S-P: 0-3-0	**Credits: 3**	**Contact Hours: 3Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 42 Hrs	**Examination Duration: 3 hours**		

Course Overview:

Today's (construction) industry environment is dynamic, in such scenarios, organisations (firms) need to manage the project with various aspects such as timeline, resource and budget. Projects are key way to create value and benefits in organisation. Hence to remain competitive and create business value, organisations are embracing project management to consistently deliver the project outcomes.

Project management is the application of knowledge, skills, tools and techniques to project activities, which helps the organisations to execute the project effectively and efficiently.

This course is designed to understand application of Project Management in various phases of project embracing various processes and also to familiarize the fundamentals of construction project management.

Unit I	
Chapter 1: Introduction to Project Management –Concept of project and project life cycle, project management process and knowledge areas Chapter 2: Organization, structure of Organization for different project & firms. Project Manager- Qualities, roles and responsibilities	14
Unit II	
Chapter 3: Construction Management Process – Introduction, Planning, Scheduling, Monitoring, Central Phase, Various scheduling techniques – Bar charts, CPM & PERT networks for different projects. Chapter 4: Site Management – Basic concept, Layouts and Management process.	16
Unit III	
Chapter 5: Construction Equipment's– Classification and operational characteristics of equipment's for Earthmoving, Hoisting and Concrete pouring. Chapter 6: Equipment's Management – Procurement process and maintenance methods.	12

Scheme for Internal semester assessment (ISA)
Internal exams: ISA 1, ISA 2 Theory
Assignment

Scheme for End Semester Assessment (ESA)
Theory Examination for the duration of 3 Hours.

Reference Books:

1. Guide, A., 2017. Project Management Body of Knowledge (PMBOK® GUIDE). Project Management Institute.
2. Sharma, S.C., 2016. CONSTRUCTION EQUIPMENT AND MANAGEMENT. Khanna publishers
3. Punmia, B.C. and Khandelwal, K.K., 2002. Project Planning and Control with PERT & CPM. Firewall media
4. Bernold, L.E., 2015. Construction equipment and methods: Planning, innovation, safety. Wiley Global Education
5. Dr.K.G. Krishnamurthy and S.V. Ravindra, 2008. Construction and Project Management

Scheme for End Semester Assessment (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Unit Number	Instructions
1	Question Numbers 1, 2 & 3	I	Solve Any 2 out of 3
2	Question Numbers 3, 5 & 6	II	Solve Any 2 out of 3
3	Question Numbers 7 & 8	III	Solve Any 1 out of 2

RETURN TO SEM VIII

Program: Bachelor of Architecture			
Course Title: E – Architectural Film Making		**e Code: 21AATE408**	**Teaching Hours:**
L-S-P: 0-2-0	**Credits: 2**	**Contact Hours: 3**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 42	**Examination Duration: N/A**		
Course Overview: Architectural Film Making course blends architecture with film, teaching storytelling, cinematography, and editing techniques specific to architectural contexts, fostering creativity through practical projects and portfolio integration			
Unit I			
Story Development: Fundamentals of storytelling and narrative structure**,** Basics of scriptwriting: Formatting, dialogue, and scene description			**16**
UNIT II			
Camera Basics: Camera anatomy and functionality: DSLR, mirror less, Mobile Camera. Exposure, aperture, shutter speed, and ISO. **Cinematography Techniques:** Framing and composition principles in architectural cinematography. Camera movement techniques: Panning, tilting, tracking, and dolly shots. Exploring different camera angles. **Audio:** Audio recording equipment and techniques for capturing quality			**16**
UNIT III			
Video Editing Basics : Understanding the editing workspace and tools, Basic editing techniques, Applying effects and filters to enhance visual storytelling, Integrating sound and music to enhance the narrative impact **Advanced editing techniques:** Color grading, motion graphics, and compositing Finalizing and exporting architectural films for distribution: Formats, resolutions, and delivery platforms			**10**
Scheme for Internal semester assessment (ISA) : Written assignments on scriptwriting and film planning Practical exercises on camera operation, lighting setup, and audio recording Film project assignments requiring students to develop, shoot, and edit architectural narratives			
Scheme for End Semester Assessment (ESA) : Term work Evaluation			
Mode of assessment: Written tasks, practical exercises, film projects, and portfolio submission.			
Textbooks :			
Reference Books : Online tutorials			

RETURN TO SEM VIII

Program: Architecture			**Teaching hrs.**
Course Title: E-Architectural Lighting		**Code: 21AATE406**	
L-S-P: 0-2-0	**Credits: 2**	**Contact. Hours: 2Hrs/week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 28Hrs	**Examination Duration: NIL**		
Unit I			
Chapter 1: Introduction to Architectural Lighting The history of architectural lighting, manipulation and design of daylight. Basics of Lighting Design systems within the built environment, both interior and exterior. Terminology and units in lighting glossary.			**4 hrs.**
Chapter 2: Elements of Lighting Design Light – Qualities and features of light which includes aesthetics, function and efficiency as three key aspects in architectural lighting. Controlling light to save energy and controlling systems. Luminaries for lighting design.			**6 hrs.**
Unit II			
Chapter 3: Classification and control of lighting systems Types of architectural Light and light sources like cove, soffit and valance. Architectural lighting Control gear and control equipment in building automation systems.			**4 hrs.**
Chapter 4: Lighting Design and analysis Lighting design with parameters to provide adequate visibility for movement and enable required functions within the space. Lighting design and analysis tools			**4 hrs.**
Unit III			
Chapter 4: Studio work Design and analysis of Lighting for a sample interior/exterior space			**10 hrs**
Scheme for Internal semester assessment (ISA) ISA1 & ISA 2 20 marks			
Scheme for End Semester Assessment (ESA) Portfolio submission			
Mode of assessment: Assignment and market study of luminaires and portfolio submission.			

RETURN TO SEM VIII

<table>
<tr><td colspan="3">Program: Architecture</td><td rowspan="5">Teaching hrs.</td></tr>
<tr><td colspan="2">Course Title: Transit Oriented Development</td><td>Code: 21AATE410</td></tr>
<tr><td>L-S-P: 0-2-0</td><td>Credits: 2</td><td>Contact.Hours:3 hrs./week</td></tr>
<tr><td>ISA Marks: 50</td><td>ESA Marks: 50</td><td>Total Marks: 100</td></tr>
<tr><td>Teaching Hours: 42 hrs.</td><td colspan="2">Examination Duration: NA</td></tr>
<tr><td colspan="3">Unit I</td><td></td></tr>
<tr><td colspan="3">Chapter 1: TOD - Theories and Principles:
Introduction to Transit Oriented Development
Theories and Principals of TOD
Case studies of Mass Transit Systems
Case studies of TOD</td><td>18</td></tr>
<tr><td colspan="3">Unit II
Chapter 2: Study, Analysis and Design of a TOD Project
Study, Analysis and Design of an identified area along a Transit Corridor using Principles of TOD and Infrastructure</td><td>18</td></tr>
<tr><td colspan="3">Unit III
Chapter 3: Article / Research Paper
Article / Research Paper on TOD related Topics</td><td>06</td></tr>
<tr><td colspan="4">Scheme for Internal semester assessment (ISA)
Reviews and Assignments</td></tr>
<tr><td colspan="4">Scheme for End Semester Assessment (ESA)
Portfolio of Assignments Submission</td></tr>
<tr><td colspan="4">Mode of assessment:
Portfolio Assessment by External</td></tr>
<tr><td colspan="4">Text Books: NA.
References - Nil</td></tr>
</table>

RETURN TO SEM VIII

IX SEMESTER

<table>
<tr><td colspan="3">Program: Architecture</td><td rowspan="4">Teaching hrs.</td></tr>
<tr><td colspan="2">Course Title: Professional Training</td><td>Code: 21AATE410</td></tr>
<tr><td>L-T/S-P: 0-0-22</td><td>Credits: 22</td><td>Contact.Hours:3 hrs./week</td></tr>
<tr><td>ISA Marks: 20</td><td>ESA Marks: 80</td><td>Total Marks: 100</td></tr>
<tr><td>Teaching Hours: NA</td><td colspan="2">Examination Duration: NA</td></tr>
<tr><td colspan="4">Course Overview: Professional Training in an Architect's office or firm will bridge the gap between education and professional practice. The student will train under the mentorship of an architect, duly approved by the university and the architect needs to be registered with Council of Architecture and having an experience of at least five years. The duration of the internship will be of 16 weeks. The students will have hands-on experience, technical skill development and exposure to architectural standards, tools and workplace environments. The students will gain practical knowledge in design development, construction documentation, project management and client communication, preparing them for a successful career as Architects or Professionals.
Contents:
Student will involve in the chosen office for various aspects of work mentioned below
• Designing and detailing of the project team, clients, consultants and suppliers.
• Office experience includes preparation of presentation/ approval/execution drawings along with specification, tender, estimations and research work.
• Digital skills for Compilation, documentation record keeping and office management work etc.
• Periodic site visits should include enhancing the skills of observation, co-ordination with various agencies and supervision of on-going project at site.

Upon successful completion of Professional Training, submission of 16 weeks of Internship shall be in the form a portfolio and a weekly or monthly work report which is mandatory along with s completion certificate from the firm duly signed by the Principal Architect / Associate Architect / Team Leader (An Architect).
For ISA, Assignments to be submitted as scheduled. The assignments will be part to Internship like Critical analysis of any building designed by the firm, Unique construction detail, unique material used etc.
Also as the student has completed Pre-Thesis, he/she needs to work on Predesign of Architectural Design – IX (Thesis Project) course of 10th Sem 2025 and submit it as an assignment for ISA.</td></tr>
<tr><td colspan="4">Scheme for End Semester Assessment (ISA)
Assignments</td></tr>
<tr><td colspan="4">Scheme for End Semester Assessment (ESA):
Jury or viva evaluating Portfolio, Weekly/ Monthly Report and ISA assignments</td></tr>
<tr><td colspan="4">Mode of assessment:
Reviews (Internal & External) for ISA Viva/Jury for ESA</td></tr>
<tr><td colspan="4">Text Books: NA.
References - Nil</td></tr>
</table>

RETURN TO SEM IX

X SEMESTER

Program: Bachelor of Architecture			**Teaching Hours**
Course Title: Architectural Design IX (Thesis Project)		**Course Code: 21AATC501**	
L-T/S-P: 0-17-0	**Credits: 17**	**Contact Hours: 27 hrs/wk**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 378	**Examination Duration: NA**		
Course Overview: Architectural Design IX (Thesis Project) is meant to provide students with expertise and knowledge necessary in order to produce innovative, creative and competent design solutions. The main objective of Design Studio is to develop students' imagination in design and allow them to explore and produce architectural designs that have dialogue and balance between poetic and pragmatic thinking. Design Studio provides architectural students with the skill to work under both intuitive and practical context. Manage specific aspects /thrust area of design relevant to the topic. Interpret the evolutionary stages of a design process and various techniques required for a successful presentation of an Architectural Design.			
Unit I			
Stage I Review of Case study, Research, Contextual Study of the Site and Design Brief Review of Literature and Case studies, comparative analysis and inferences. Analyzing existing related structures, Data Collection from standards and NBC, Local building bye laws and norms governing the type of project. Students will express their architectural ideas and creativities through myriad communication techniques and methods such as in the forms of drawings, physical models, computer models, photography, video clips and others Demographic data – present and projected population, population distribution and population density. Physical data- Macro site (Political Boundaries, Area & land uses, climate, adjoining areas and uses, access) Micro site (Topography/landform, water bodies & quality, vegetation, visual resources and existing structures. Social and Economic services, Physical Infrastructure. They will analyze and interpret the data and the site. Concretize the abstraction of space relationships into units of measure. Site Analysis and design formulation Site Analysis –Macro site and Micro site, Schematic site plan and model. Site synthesis, Behavioral Analysis – Users their activities, the culture of the people. Interrelationship analysis – Space programming, (Bubble diagrams), Organization of spaces, Zoning. Design brief.			**27 hrs**
Stage 2 Preliminary Design Development Conceptualizing – Enumerate the specific functions and specific activities. Space and form formulation, Master plan development, Preliminary plans, elevations, sections and study models. draft report			**125 hrs**
Unit II			
Stage 3 Design Development Detail floor plans, elevations and sections, site plan, master plan, 3d views and renderings with physical models.			**152 hrs**
Unit III			
Stage 4 Final Design Final Master and Block Plans, All the layers ,Detail floor plans, elevations and sections, Massing 3d views and renderings with physical models. Effectively communicating the design process of the selected Thesis topic through various media and preparation of report.			**74 hrs**
Scheme for End Semester Assessment (ISA) Regular Reviews, Assignments and models. Term work: Evaluation of Portfolio, assignments by internal examiner			
Scheme for End Semester Assessment (ESA):			

Jury, Term work and Final report	
Mode of assessment: Reviews (Internal & External) for ISA Viva/Jury for ESA	
Text Book-Nil	

References

1. Linda Grant and David Wang, “Architectural Research Methods”, John Wiley Sons, 2002
2. Edmund Bacon , “Design of Cities” , Penguin, 1976
3. Gordon Cullen, “The Concise Townscape”, The Architectural Press, 1978
4. Lawrence Halprin, “Cities”, Revised Edition, MIT Press 1972.
5. Gosling and Maitland, “Urban Design”, St. Martin’s Press, 1984
6. Kevin Lynch, “Site Planning”, MIT Press, Cambridge 1967
7. Michelle Provoost et al., Dutchtown, NAI Publishers, Rotterdam, 1999.
8. Jawgeih, “Life between Buildings”, Using Public Space, Arkitektens Forleg 1987.
9. Anthony Antoniades, “Poetics of architecture”,Theory of design, John Wiley & sons 1992,
10. Paul -Alan Johnson, “Theory of Architecture: Concepts, Themes”, Wiley 2008 VNR, 1994
11. Christopher Alexander, “Pattern Language”, Oxford University Press, 1977
12. Amos Rapoport, House, Form & Culture, Prentice Hall Inc. 1969.
13. Dominique Gauzin – Muller “Sustainable Architecture and Urbanism: Concepts, Technologies and examples”, Birkhauser, 2002.
14. Calendar.J.H, Time Saver Standard for Architectural Design Data, Aswin St, 1983
15. Ramsey and Sleeper, Architectural Graphic Standards,
16. Neufert, Architects Data, Franarda, London, 1980
17. 21. Chaira.J.D.and Salleder, Time Saver Standard for Building types, MH New york, 1995
18. Watson.D,Crosbie M.J, Time Saver Standard for Architectural Design, New york, 2005
19. National Building Code.
20. Richard Kintermann and Robert, “Small Site Planning for Cluster Housing”, Van Nastrand Reinhold Company, London/New York 1977.
21. Miller T.G. Jr., “Environmental Sciences”, Wadsworth Publishing Co., 1994
22. Geoffrey and Susan Jellico, “The Landscape of Man”, Thames and Hudson, 1987.
23. Arvind Krishnan & Others, “ Climate Responsive Architecture”, A Design Handbook for Energy Efficient Buildings, TATA McGraw Hill Publishing Company Limited, New Delhi, 2007.

RETURN TO SEM X

Program: Bachelor of Architecture			
Course Title: Professional Practice-II		**Course Code: 21AATC502**	**Teaching Hours**
L-T/S-P:	**Credits:**	**Contact Hours: 3Hrs/week**	
ISA Marks: 50	**ESA Marks:50**	**Total Marks: 100**	
Teaching Hours: 42	**Examination Duration: 3HRS**		
Course Overview: The course shall induce the understanding of the Indian Constitution, structure, fundamental and directive principles and their relevance to governance, public policy and legal process in stage I and It shall provide thorough understanding of building regulations, codes relevant to architecture and urban context. The subject bridges constitutional law and professional practice. **Course Content:** 1. Framework of the Indian Constitution. 2. Social justice and legal provisions in the Indian constitution. 3. Provisions or electoral process in India. 4. Building codes ad regulations. 5. Legal aspects regarding professional practice in India.			
Unit I			
Constitutional Law			
Chapter 1: Features of Indian Constitution – Features of Indian Constitution, Preamble to the constitution of India, Fundamental rights under Part III – details of Exercise rights, Limitations & Important cases.			**03**
Chapter 2: Relevance of Directive principles of State Policy Relevance of Directive principles of State Policy under Part IV. Fundamental duties and their significance.			**03**
Chapter 3: Union and State of India. Union – President, Vice President, Union Council of Ministers, Prime Minister, Parliament and the Supreme Court of India. State- Governors, State Council of Ministers, Chief Minister, State Legislature and Judiciary.			**06**
Chapter 4: Constitutional Provisions for Scheduled Castes and Tribes Union Constitutional Provisions for Scheduled Castes and Tribes, Women & Children and Backward classes, Emergency Provision.			**03**
Chapter 5: Electoral Process Union Electoral process, Amendment procedure, 42nd, 44th and 86th Constitutional Amendments.			**03**
Unit II			
Chapter 6: National Building Code. Need and nature of building codes, standards and regulations, overview of basic terminologies, nature of building codes in special regions like heritage zones, environmentally sensitive zones, disaster prone regions, coastal zones, hilly areas, etc. Norms for Vehicular Areas, Norms for Fire Protection, Norms for Building Services.			**06**
Chapter 7: Building Regulations: Building Bye laws and Regulations, Setbacks and margins, norms for building projections in open spaces, considerations in Floor Area Ratio (FAR) and Floor Space Index (FSI), building height regulations, Study of local administrative provisions for obtaining building permits.			**06**
Unit III			
Chapter 8: Arbitration and Conciliation – Methods to settle disputes and differences, Arbitration – Types, Arbitrator, power and duties of Arbitral Tribunal, Umpire, Awards and Conduct of arbitration proceedings. Conciliation – Duties of Conciliator. Arbitration and Conciliation Act 1996.			**06**

Chapter 9: Dilapidation and Easements – Dilapidation - Definition, Characteristics, Schedule of Dilapidations, Preparation of Dilapidation Report Easements – Definition, Various easement rights, process and precautions to be taken by the architect in protecting or preventing the concerned parties from acquiring such rights.	04
Chapter 10. Professional Liabilities: Indemnity Insurance: Definition, need of the clause in the agreement.	02
Text Book NIL	
References **1.** Professional Practice – Dr. RoshanNamavati **2.** Architectural Practice and Procedure – Ar. V S Apte **3.** National Building Code Book. **4.** Architectural Practice in India – Ar. MadhavDeobhakta **5.** Professional Practice – Dr. K G Krishna Murthy and Prof S V Ravindra **6.** Constitutional Law of India – Dr. J N Pandey.	

Scheme for End Semester Assessment (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Unit Number	Instructions
1	Question Numbers 1, 2 & 3	I	Solve Any 2 out of 3
2	Question Numbers 3, 5 & 6	II	Solve Any 2 out of 3
3	Question Numbers 7 & 8	III	Solve Any 1 out of 2

RETURN TO SEM X

Program: Architecture			**Teaching Hrs**
Course Title: E- Documentation And Technical Writing		**Code: 21AATE501**	
L-T/S-P: 0-2-0	**Credits: 2**	**Contact Hours: 3 Hrs /week**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 42 Hrs	**Examination Duration: NA**		

Course Overview: This course equips students with the skills to produce **clear, precise, and effective technical documentation and writing** for academic, professional, and industry contexts. It focuses on the principles and formats of technical communication, including **reports, manuals, proposals, and digital documentation**, with an emphasis on accuracy, structure, and audience awareness. The course also covers **documentation methodologies**, editing, formatting standards, and the use of digital tools in technical writing.

Unit I	
Chapter 1: Documentation and Technical Writing: Introduction to Documentation and Technical Writing , Various process of Documentation media or technique, Monographs and Magazine Formats	**20**
Unit II	
Chapter 2: Effective Writing Skills Dissertation / Thesis Report Writing Compiling of Ideas and Thoughts generated during Design Process	**14**
Unit III	
Chapter 3: Article / Research Paper Article / Research paper on any architect showcasing his design philosophy and architectural works	**08**

Scheme for Internal semester assessment (ISA)
Reviews and Assignments

Scheme for End Semester Assessment (ESA)
Portfolio of Assignments Submission

Mode of assessment:
Portfolio Assessment by External

Text Books

1. NA.

References

1. Nil

RETURN TO SEM X

Program : Architecture			
Course Title: E-Architecture and Human Behavior		**Code:21AATE502**	**Teaching Hours**
L-T/S-P: 0-2-0	**Credits: 2**	**Contact Hours: 3**	
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**	
Teaching Hours: 42	**Examination Duration: NA**		

Course overview :

This course explores the relationship between the built environment and human behavior, examining how architectural design influences the way people perceive, interact with, and respond to spaces. It draws from fields such as environmental psychology, sociology, anthropology, and neuroscience to understand the behavioral patterns that emerge in various settings. Students learn to apply behavioral insights to design spaces that are more responsive, inclusive, and user-centered.

Unit I	
Introduction to Behavioral and Environmental Psychology. Evolution of Human Behavior. Interaction of Man and environment, Man and built forms and study of psychology of spaces. Methods and process of studying human psychology in the context of Architecture.	**18**
Unit II	
The Human – Nature interface through the medium of Biophilic Design. Nature in Space – Study of Visual Connection with Nature, Non-Visual Connection with Nature, Non-Rhythmic Sensual Stimuli, Thermal / Airflow Variability, Presence of Water, Dynamic and Diffused Light, Connection to Natural Systems. Natural Analogues – Study of Biomorphic forms and Patterns, Material Connection to Nature, Complexity and Order Nature of the Space – Study of Prospect, Refuge, Mystery, Risk / Peril	**16**
Unit III	
Building Systems Room use, geometry & meaning, hidden behavioral assumptions, adjacencies, vertical bypass & horizontal bypass, various stages in the design of building subsystems. Building – Behavioral Interface Geometry of spaces, their meaning & connotations, Social organization of buildings, Behavioral assumptions in the planning of new towns and neighborhoods, borrowed space. Behavioral Design Process organization chart, affinity matrices, pictograms: behavioral design process model, design context, activity/adjacency relationship, evaluation chart, Area use frequency program, simultaneous use, community utilization map, occupancy load profile, defensible space, EDRA etc., **Urban Environment** Patterns of activity in time and space, the ecology of a neighborhood park and playground, cross-cultural issues, social & psychological issues in the planning of new towns, environmental perceptions and migration, awareness and sensitivity to open spaces, environmental cognition.	**08**

Scheme for Internal semester assessment (ISA)

Presentation of the assignments through power point slides. The evaluation shall be through periodic internal

reviews.
The students have to present the entire semester work for assessment along with all the hardcopy assignment.
Term work Evaluation of final portfolio, assignments by internal examiner

Scheme for End Semester Assessment (ESA)

Term work: Evaluation of Portfolio and assignments by internal and external examiners/Viva

Mode of assessment :

Portfolio, Assignments, Presentations

Text Books :

1. Burnette, C. (1971). Architecture for human behaviour. Philadelphia Chapter : AIA.
2. Canter, D. and Lee, T. (1974). Psychology and the built environment. New York : Halstead Press.
3. Christopher, A. et al. (1977). A Pattern Language. New York : Oxford University Press.
4. Clovis, H. (1977). Behavioural Architecture. McGraw Hill.
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6. Sanoff, H. (1991). Visual Research Methods in Design. New York : John Wiley & Sons._
7. Zeisel, J. (1984). Enquiry by design: Tools for Environment-Behaviour Research. Cambridge: Cambridge University Press.
8. Zeisel, J. and Eberhard, J. P. (2006). Inquiry by Design - Environment/Behaviour/Neuroscience in Architecture, Interiors, Landscape and Planning. New York : W. W. Norton & Company.
9: Evolution and Human Behaviour: Darwinian Perspectives on the Human Condition by John Cartwright

Reference:

1: Built Environment Psychology: A complex affair of buildings and user by Mr.Safiulla Khan, Integral University, India. 2: Architectural Psychology – S T Janitius, St.John's College, Bangalore
3: Spaces of Social Influence by Anna P Gawlikowska
4: Psychology of Architecture by W.Bro Victor G Popow 5: Behavioral Architecture – SPA Vijaywada

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<table>
<tr><td colspan="3">Program: Architecture</td><td></td></tr>
<tr><td colspan="2">Course Title: Elective – Adobe Illustrator</td><td>Course Code: 21AATE503</td><td rowspan="4">Teaching Hours</td></tr>
<tr><td>L-T-P:0-2-0</td><td>Credits: 2</td><td>Contact Hours: 3</td></tr>
<tr><td>ISA Marks:50</td><td>ESA Marks:50</td><td>Total Marks:100</td></tr>
<tr><td>Teaching Hours:42</td><td colspan="2">Examination Duration: NA</td></tr>
<tr><td colspan="3">Course Overview:
This course offers a comprehensive introduction to Adobe Illustrator, a leading vector-based design software widely used in graphic design, digital illustration, branding, and visual communication. Students will develop foundational to intermediate skills in creating and editing scalable graphics, including icons, logos, infographics, illustrations, and presentation layouts. Emphasis is placed on both creative expression and technical proficiency, with practical assignments to reinforce learning.</td><td></td></tr>
<tr><td colspan="3">Unit I</td><td rowspan="2">18</td></tr>
<tr><td colspan="3">Graphic Designs
Create everything from gorgeous print, web and mobile graphics to logos, icons,
brochures, flyers, posters etc.</td></tr>
<tr><td colspan="3">Unit II</td><td rowspan="3">16</td></tr>
<tr><td colspan="3">Typographic Designs
Design typographic designs and add effects, manage styles, and edit individual characters</td></tr>
<tr><td colspan="3">Unit III</td></tr>
<tr><td colspan="3">Publish artwork to various media
Publish illustrations anywhere, including printed pieces, presentations, websites, blogs, and social media.</td><td>08</td></tr>
<tr><td colspan="3">Text Books - Nil</td><td></td></tr>
<tr><td colspan="3">Reference: Online tutorials.</td><td></td></tr>
<tr><td colspan="3">Scheme for Semester End Examination (ESA)
Assignments, Checking of Portfolio f Term Work / Viva.</td><td></td></tr>
</table>

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