ESTD. 1939

KARNATAK LAW SOCIETY'S GOGTE
INSTITUTE OF TECHNOLOGY
"JNANA GANGA" UDYAMBAG, BELAGAVI-590008,
KARNATAKA, INDIA.
Approved by AICTE & UGC
Permanently Affiliated and Autonomous Institution
Under Visvesvaraya Technological University, Belagavi
www.git.edu

ESTD. 1979

2023 Scheme

Department: Architecture

Programme: B.Arch

5st and 6th Semester Scheme of Teaching Examination

and Semester Syllabus

INSTITUTION VISION

Gogte Institute of Technology shall stand out as an institution of excellence in technical education and in training individuals for outstanding caliber, character coupled with creativity and entrepreneurial skills.

INSTITUTION MISSION

To train the students to become Quality Engineers with High Standards of Professionalism and Ethics who have Positive Attitude, a Perfect blend of Techno-Managerial Skills and Problem solving ability with an analytical and innovative mindset.

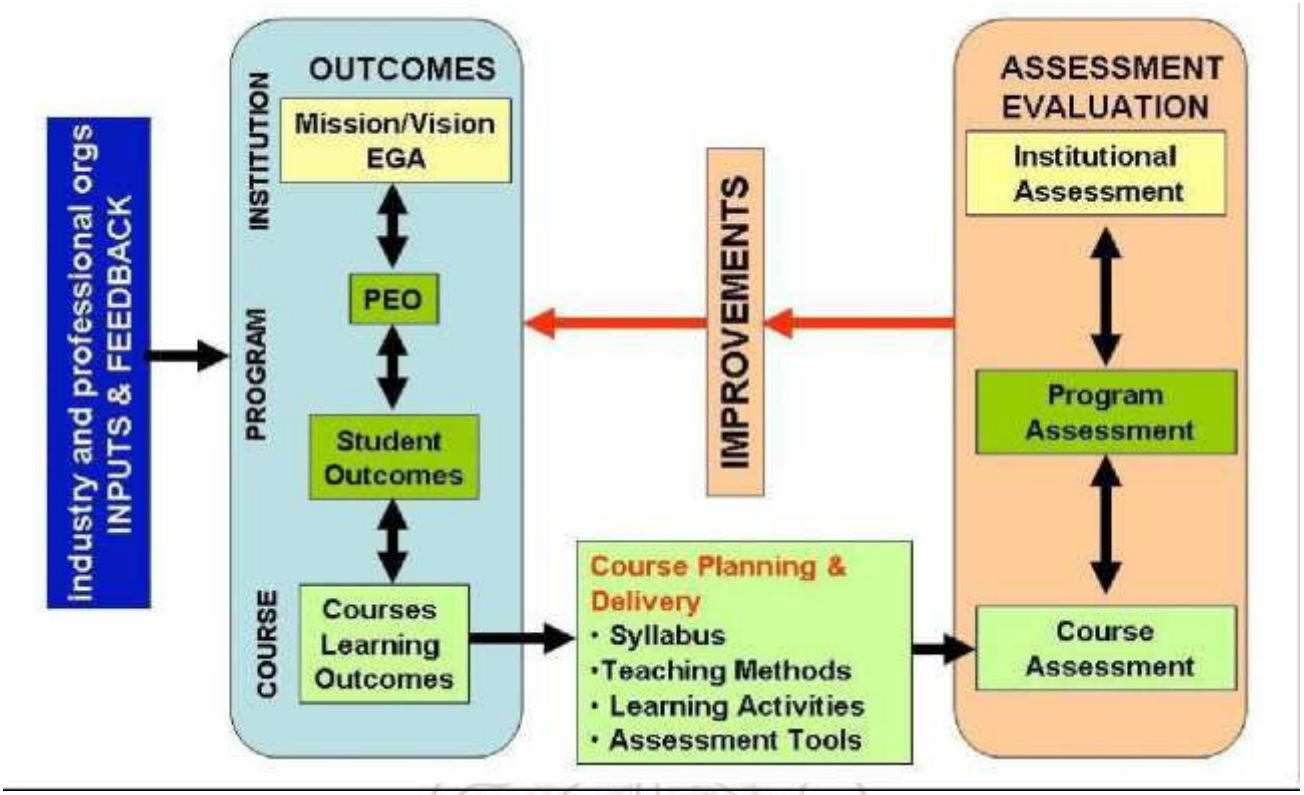
QUALITY POLICY

- Imparting value added technical education with state-of-the-art technology in a congenial, disciplined and a research oriented environment.
- Fostering cultural, ethical, moral and social values in the human resources of the institution.
- Reinforcing our bonds with the Parents, Industry, Alumni, and to seek their suggestions for innovating and excelling in every sphere of quality education.

DEPARTMENT VISION
To achieve excellence in Architectural education, nurturing individuals with creative, technical and entrepreneurial skills towards ethical and holistic design approach.

DEPARTMENT MISSION
● To develop core competencies of design and professionalism to address complex design issues that are emerging in today's global scenario. ● To train students to be empathetic in the process of designing built environments that respond appropriately to aesthetic, technological, socio-cultural and economic contexts. ● Establishing an immersive learning environment that promotes critical thinking, collaborative research and holistic design approach by bringing in expertise, infrastructure and technologies together.

OUTCOME BASED EDUCATION (OBE)



PROGRAMME OUTCOMES

1. **Architectural Knowledge**: Apply the requisite knowledge to create Architectural designs that satisfy aesthetic, functional and technical requirements for livable habitats responding to divergent arts, cultural, social, physical and environmental contexts.

2. **Problem Analysis:** Identify, formulate, review research literature and analyse complex Architectural design problems for reaching substantiated conclusions.

3. **Evolving Design Solutions:** Design solutions for complex Architectural problems that meet the specified needs with appropriate consideration for the aesthetic, cultural, societal, economical, physical, environmental and technological concerns.

4. **Critical Thinking:** Use analysis and interpretation of data, research-based knowledge, research methods and design approaches to critically evaluate and synthesize appropriate design solutions.

5. **Adaptability to latest Tools and Techniques:** Learn and apply latest design softwares and techniques for representing and communicating Architectural designs.

6. **The Architect and Society:** Apply Architectural skills to address complex issues concerning society, culture, health, safety and legal aspects to achieve holistic development.

7. **Environment and Sustainability:** Understand the impact of the Architectural solutions in societal and environmental contexts and demonstrate the knowledge of, and need for creating healthy communities and sustainable development.

8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the Architectural practice.

9. **Individual and Team-work:** Function effectively as an individual and as a member or leader in diverse teams, and in multidisciplinary settings according to changing global scenarios.

10. **Communication:** Apply communication skills to effectively manage challenging professional demands, to communicate, present, deliver ideas and design solutions.

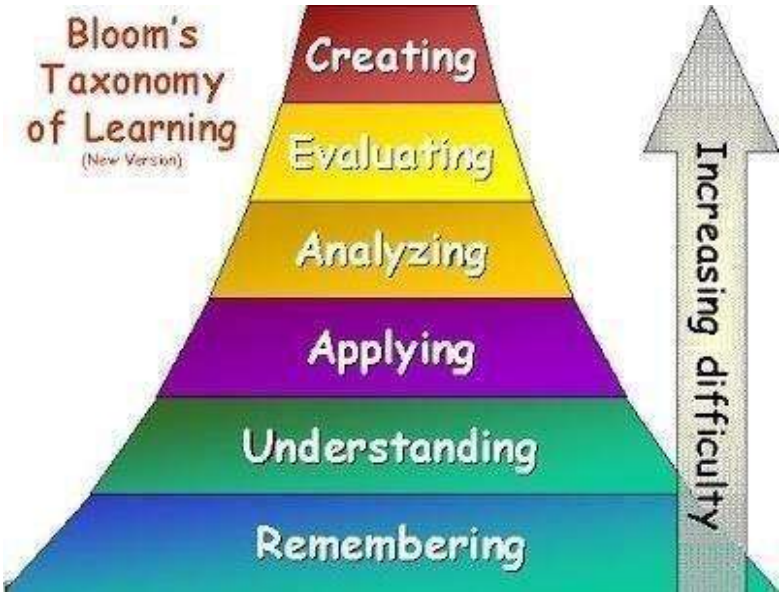
11. **Project Management Skills:** Demonstrate knowledge and understanding of the project financing and management principles and apply these to profession, individually or as a team tosuccessfully manage complex projects in multidisciplinary environments.

12. **Life-long Learning:** Recognize the need and ability to consistently engage in independent and lifelong learning in the ever changing global context.

BLOOMS TAXONOMY OF LEARNING OBJECTIVES

Bloom's Taxonomy in its various forms represents the process of learning. It was developed in 1956 by Benjamin Bloom and modified during the 1990's by a new group of cognitive psychologists, led by Lorin Anderson (a former student of Bloom's) to make it relevant to the 21st century. The revised taxonomy given below emphasizes what a learner "Can Do".

Lower order thinking skills (LOTS)		
L1	Remembering	Retrieve relevant knowledge from memory.
L2	Understanding	Construct meaning from instructional material, including oral, written, and graphic communication.
L3	Applying	Carry out or use a procedure in a given situation – using learned knowledge.
Higher order thinking skills (HOTS)		
L4	Analyzing	Break down knowledge into its components and determine the relationships of the components to one another and then how they relate to an overall structure or task.
L5	Evaluating	Make judgments based on criteria and standards, using previously learned knowledge.
L6	Creating	Combining or reorganizing elements to form a coherent or functional whole or into a new pattern, structure or idea.



COURSES, PERIODS OF STUDY AND SUBJECTS OF EXAMINATION UNDER CHOICE BASED CREDIT SYSTEM FOR THE ARCHITECTURE DEGREE PROGRAMME

1. Under the Choice based credit system, which is a student/ learner centric system, the courses of study in the Architecture Degree program shall be as under:
    1) **Professional Core (PC) Course:** A course, which should compulsorily be studied bya candidate as a core requirement is termed as a Core course.
    2) **Building Sciences and Applied Engineering (BS & AE) Course:** A course which informs the Professional core and should compulsorily be studied.
    3) **Elective Course**: Generally a course which can be chosen from a pool of courses and are of two types:
        i. **Professional Elective (PE**) which may be very specific or specialized or advanced or supportive to the discipline or subject of study or which provides an extended scope.
        ii. **Open Elective (OE)** which enables an exposure to some other discipline or subject or domain or nurtures the candidate's proficiency or skill.
    4) **Employability Enhancement Courses (EEC**) which may be of two kinds:
        i. **Employability Enhancement Compulsory Courses (EECC**)
        ii. Skill Enhancement Courses (SEC)
2. The Weightage in terms of Credits for each of the above in the prescribed curriculum of the institution shall be as follows:
    1) Professional Core Courses (PC): 50%
    2) Building Science and Applied Engineering (BS& AE): 20 %
    3) Elective Courses
        i. Professional Electives (PE): 10%
        ii. Open Electives (OE): 5%
    4) Professional Ability Enhancement Courses (PAEC)
        i. Professional Ability Enhancement Compulsory Courses (PAECC): 10%
        ii. Skill Enhancement Courses (SEC): 5%

Note: Where it is not possible to offer Open Electives, Professional Electives may have a weightage 15% of the total credits.

SEMESTER WISE DISTRIBUTION OF CREDITS FOR B.ARCH PROGRAMME

Total credits for B.Arch Programme: 270 credits

	Semester	Credits per Sem	Total credits
1st year	1	30	59
	2	29	
2nd year	3	31	62
	4	31	
3rd year	5	31	61
	6	30	
4th year	7	31	47
	8	16	
5th year	9	29	41
	10	12	
	Total	**270**	**270**

Curriculum Flow Chart 2023 scheme

STREAM	I SEM	II SEM	III SEM	IV SEM	V SEM	VI SEM	VII SEM	VIII SEM	IX SEM	X SEM
DESIGN	Mono-spaces and Residential Design	Elements of Space Making and Design	Contextual Design	Structural Aesthetics in Architecture	Housing Design	Campus Design	Urban Infill Design	Professional Training	Dissertation (Thesis Part- I)	Architectural Design Project (Thesis Part-II)
	Basic Design and Design Thinking in Architecture		Climate Responsive Architecture		Theory of Architecture-I	Theory of Architecture-II	Specification, Estimation and Costing		Energy Efficient Architecture	
					Working Drawing	Landscape Architecture			Interior Design	
TECHNOLOGY	Building Construction and Materials-I	Building Construction and Materials-II	Building Construction and Materials-III	Building Construction and Materials-IV	Building Construction and Materials-V	Building Construction and Materials-VI	Alternate Building Techniques			
	Architectural Graphics-I	Architectural Graphics-II	Water Supply and Sanitation	Electricity and Illumination	HVAC and Fire Safety		Acoustics in Architecture			
	Evolution of Structures and Engineering Mechanics	Analysis of Determinate Structures	Design of RCC Structures	Design of Steel Structures	Principles of Advanced Structural Form					
		Surveying and Leveling	Computer Application-I	Computer Application-II						
HUMANITIES	History of Architecture- I	History of Architecture-II	Hindu Temple Architecture in India	Islamic and Colonial Architecture in India	Renaissance to Modernism	Physical Planning	Professional Practice-I		Professional Practice-II	Constitution of India and Professional Ethics
	Samskrutika Kannada	Communication Skills			Study Tour	Contemporary Architecture	Traffic Awareness and Road Safety		Entrepreneurship skills	
	Balake Kannada	Social Connect and Responsibility		Humanities		Universal Human Values and Professional Ethics				
	Scientific Foundations of Health									
ELECTIVE			Elective - I: Literature and Arts	Elective - II: Architectural Presentation and Documentation	Elective - III: Natural Systems/Environmental studies/Context	Open Elective -I	Elective - IV: Design and Practice		Elective - V: Advance Technology	
							Open Elective-II		Elective - VI: Management and Research	
							Certification Course			

BATCH _2023

Karnatak Law Society's

GOGTE INSTITUTE OF TECHNOLOGY, BELAGAVI-08

Bachelor of Architecture

SCHEME OF TEACHING AND EXAMINATION

Department :Architecture

Semester: V

Course Stream	Course Code	Course Type	Course Title	Teaching Department	Contact Hrs				Credits	Marks					Duration of Exam
										CIE		SEE		Total	
					L	S	P	Total		PA	CA	VIVA/ TW	EXAM		
DESIGN	23DES5.1	PC	Housing Design	Architecture	1	7	0	8	8	80	20	100	-	200	-
	23DES5.2	PC	Theory of Architecture-I	Architecture	3	0	0	3	3	80	20	-	100	200	3 hrs
	23DES5.3	SEC	Working Drawing	Architecture	1	0	2	3	3	80	20	100	-	200	-
TECHNOLOGY	23TEC5.1	BS&AE	Building Construction and Materials-V	Architecture	1	4	0	5	5	80	20	100	-	200	-
	23TEC5.2	BS&AE	HVAC, Vertical transportation and Fire Safety	Architecture	3	0	0	3	3	80	20	-	100	200	3 hrs
	23TEC5.3	BS&AE	Principles of Advanced Structural Form	Architecture/ Civil	3	0	0	3	3	80	20	-	100	200	3 hrs
HUMANITIES	23HUM5.1	PC	Renaissance Architecture to Modern Architecture	Architecture	3	0	0	3	3	80	20	-	100	200	3 hrs
	23HUM5.2	MNC	Study Tour	Architecture	0	0	0	0	MNC	80	20	-	-	100	-
ELECTIVES	23APE5.1x	PE	Elective - III: Natural Systems/Environmental studies/Context	Architecture/Allied	3	0	0	3	3	80	20	-	-	100	-
					18	11	2	31	31	720	180	300	400	1600	

L-Lecture **CIE- Continuous Internal Evaluation** **CA-Course Activity**

S-Studio **SEE- Semester End Examination** **PA-Progressive Assessment**

P-Practical **PC - Professional Core; BS&AE- Building Science and Applied Engineering; PE- Professional Elective; OE- Open Elective**

MNC- Mandatory Non Credit **PAECC - Professional Ability Enhancement Compulsory Courses; SEC Skill Enhancement Courses. AEC- Ability Enhancement Courses UHV - Universal Human Values**

Minimum marks for passing: Theory, Studio and Lab marks (CIE): 50%, Term work/Viva/Lab(SEE): 40%, Theory Marks(SEE : 40%

For a pass in a course, a candidate shall secure overall 50% of the maximum marks of the course i.e; CIE+SEE put together.

Note: An International study tour will be arranged (optional across 1st to 10th semester)

Elective - III: Natural Systems/Environmental studies/Context			
Course Code	**Course Title**		
23APE5.11	Cost Effective Design	23APE5.13	Eco-friendly Architecture
23APE5.12	Biomimicry	23APE5.14	Indian Traditional Knowledge Systems in Architecture

BATCH _2023

Karnatak Law Society's

GOGTE INSTITUTE OF TECHNOLOGY, BELAGAVI-08

Bachelor of Architecture

SCHEME OF TEACHING AND EXAMINATION

Department :Architecture

Semester: VI

Course Stream	Course Code	Course Type	Course Title	Teaching Department	Contact Hrs				Credits	Marks					Duration of Exam
					L	S	P	Total		CIE		SEE		Total	
										PA	CA	VIVA/ TW	EXAM		
DESIGN	23DES6.1	PC	Campus Design	Architecture	1	7	0	8	8	80	20	100	-	200	-
	23DES6.2	PC	Theory of Architecture-II	Architecture	3	0	0	3	3	80	20	-	100	200	3 hrs
	23DES6.3	PC	Landscape Architecture	Architecture	2	2	0	4	4	80	20	-	100	200	3 hrs
TECHNOLOGY	23TEC6.1	BS&AE	Building Construction and Materials-VI	Architecture	1	4	0	5	5	80	20	100	-	200	-
HUMANITIES	23HUM6.1	PC	Physical Planning	Architecture	3	0	0	3	3	80	20	-	100	200	3 hrs
	23HUM6.2	PC	Contemporary Architecture	Architecture	3	0	0	3	3	80	20	-	100	200	3 hrs
	23HUM6.3	UHV	Universal Human Values and Professional Ethics	Architecture/Allied	1	0	0	1	1	40	10	-	50	100	1 hr
ELECTIVES	23AOE6.1x	OE	Open Elective -I	Any	3	0	0	3	3	80	20	-	-	100	-
					17	13	0	30	30	600	150	200	450	1400	

L-Lecture **CIE- Continuous Internal Evaluation** **CA-Course Activity**

S-Studio **SEE- Semester End Examination** **PA-Progressive Assessment**

P-Practical **PC - Professional Core; BS&AE- Building Science and Applied Engineering; PE- Professional Elective; OE- Open Elective**

MNC- Mandatory Non Credit, PAECC - Professional Ability Enhancement Compulsory Courses; SEC Skill Enhancement Courses. AEC- Ability Enhancement Courses UHV - Universal Human Values

Marks (SEE) : 40%,

For a pass in a course, a candidate shall secure overall 50% of the maximum marks of the course i.e., CIE+SEE put together

Open Elective Marks (CIE) : 40%, (SEE) : 35%.

For open elective course, a candidate shall secure overall 40% of the maximum marks of the course i.e., CIE+SEE put together.

Minimum marks for passing: Theory, Studio and Lab Marks (CIE) : 50%, Term Work / Viva/Lab(SEE) : 40% , Theory

Open Elective Courses: Students belonging to a particular stream of Engineering and Architecture are not entitled to the open electives offered by their parent Department. However, they can opt for an elective offered by other Departments, provided they satisfy the prerequisite condition if any. Registration to open electives shall be documented under the guidance of the Program Coordinator/ Advisor/Mentor. The minimum numbers of students' strength for offering Open Elective Course is 10. However, this condition shall not be applicable to class where the admission to the program is less than 10.

Open Elective- I (Offered for Non Architecture Students)			
Course Code	Course Title	Course Code	Course Title
23AOE6.11	Sustainable Architecture	23AOE6.12	Urban Planning

HOUSING DESIGN

Course Code	23DES5.1	Course type	PC	Total credits	8
Hours/week: L-S-P	1– 7 – 0			CIE Marks	100
Total Contact Hours	L = 14 Hrs; S = 98 Hrs; P = 0 Hrs Total = 112 Hrs			SEE Marks	100

Course learning objectives	
1.	To understand Housing as a process rather than a product.
2.	To understand housing in relation to its economic and socio-cultural aspects.
3.	To analyze the characteristics, design elements, and services of both organic and planned communities through site studies, case studies, and literature reviews.
4.	To enable students to develop design solutions that address contemporary living needs, incorporating varying levels of privacy, multifunctional community spaces, efficient use of open spaces, and extended living areas.

Pre-requisites : Nil

Unit – I: Introduction to Housing	Contact Hours = 08 Hours
Study of the economic and social -cultural aspects of Housing by exploring the concept of housing, its key elements, and the differences between organic and planned housing types. This understanding will be reinforced through a detailed site study and case study analysis.	

Unit – II: Literature Case Study	Contact Hours = 16 Hours
Students shall understand and analyze housing projects by master architects and explore the economic and socio-cultural values of a community. The study will focus on various design elements, including organizational patterns, the hierarchy of open spaces, relationships between built and unbuilt spaces, extended living areas, multifunctional community spaces, and amenities.	

Unit – III: Design Project	Contact Hours = 88 Hours
In this phase students through design project shall demonstrate understanding of the above housing design principles. The project shall aim to address issues pertaining to occupational housing. Projects like Multistoried Apartments for IT sector/ Industrial employees/ Government Servants/ Teaching faculty and similar nature projects can be attempted. The context for the project can be urban and suburban or rural.	

Design Methodology:
The design development process explores housing patterns and theories through literature case studies, live case studies, site analysis, data collection, concept development, design sketches, drawings, study models and final design portfolio submission.

Books	
Reference Books:	
1.	Correa Charles, Housing and Urbanization, UDRI, Mumbai, Edition 2002 and Onwards
2.	Rapoport Amos, House Form and Culture, Prentice Hall, Edition 1969 and Onwards
3.	Doshi B.V, Aranya Low Cost Housing. Edition 1990 and Onwards
4.	Residential open spaces: A behavioural analysis , VastuShilpa Foundation for Studies and Research in Environmental Design 1988.
5.	Alexander Christopher, *Pattern Language*, Oxford University Press, 1977.
6	Alexander Christopher, *A Timeless Way of Building*, Oxford University Press, 1979
7.	Van Gameren Dick & Verma Rohan, *Designs for Housing: Charles Correa*, 2018.

Course delivery methods		Assessment methods	
1.	PPT and Videos	1.	Progressive Portfolio Assessment/Reviews
2.	Case Study	2.	Course Activity Assessment
3.	Site Study	3.	Semester End Examination
4.	Design Discussions		
5.	Models		
6.	Walkthrough through Virtual Reality (VR) tool		

Course Outcome (COs) At the end of the course, the student will be able to			
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**
1.	**Explain** Housing as a process rather than a product.	**Un**	1,12
2	**Explain** Housing project as a product of economic and socio-cultural aspects.	**Un**	1, 6
3	**Identify** and **analyze** the characteristics of housing through case studies.	**Un, An**	1, 2, 4, 6
4	**Develop** an architectural project that integrates all essential elements of housing design.	**Ap, Cr**	1 ,2, 3, 4, 6,10,12

Scheme of Continuous Internal Evaluation (CIE):				
Components	Portfolio Marking	Reviews	*Course Activity	Total Marks
Marks	40	40	20	100
Minimum score to be eligible for SEE: 50 OUT OF 100				

Note:

- Course Activity will be evaluated as the outcome (sketches/model/Report/Monograph) of site visits/ Workshops/ Hands-on / Analytical understanding/ Theoretical Studies/ Documentation/Study tours/Design Process/Design walk.
- The content and mode of conduct of the Course Activity is the prerogative of the course faculty to suitably attain the COs and POs.

Scheme of Semester End Examination (SEE):	
1.	Viva Voce Examination will be conducted for 100 marks.
2.	**Minimum marks required in SEE to pass:** Score should be ≥ 40%, however overall score of CIE+SEE should be ≥50%.

CO-PO Mapping (Planned)												
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO 11**	**PO 12**
1	√											√
2	√					√						
3	√	√		√		√						
4	√	√	√	√		√				√		√

Name & Signature of Faculty members involved in designing the syllabus

Name & Signature of Faculty verifying/approving the syllabus

THEORY OF ARCHITECTURE - I

Course Code	23DES 5.2	Course type	PC	Total credits	3
Hours/week: L - S- P	3 – 0 – 0			CIE Marks	100
Total Contact Hours	L = 42 Hrs; S = 0 Hrs; P = 0 Hrs Total = 42 Hrs			SEE Marks	100

Course learning objective	
1.	To introduce the Aesthetic principles and spatial organisation involved in Architecture.
2.	To Understand and Analyze architectural form, Composition, theory, styles, and Perceptions in Architecture.

Unit-I: Principles of Aesthetics and Architectural Composition-I	Contact Hours =06 Hours

a) Unity, Balance, Proportion, Scale in Architectural composition, illustrations and its application to the practice of design with historical as well as contemporary buildings.
b) Contrast, harmony, accentuation, restraint in Architectural composition, illustrations and its application to the practice of design in historical as well as contemporary buildings.

Unit–II : Principles of Aesthetics and Architectural Composition -II	Contact Hours =06 Hours

a) Vitality, strength in Architectural composition, illustrations and its application to the practice of design in historical as well as contemporary buildings.
b) Organizing principles of Aesthetics and Architectural Composition: symmetry, asymmetry, hierarchy, datum, axis, rhythm in Aesthetics and Architectural Composition and its application to the practice of design.

Unit – III: Spatial Organizations of Masses in Architecture	Contact Hours = 10 Hours

a) Centralized and clustered: Study of different types of organizing patterns in different contexts like climate, topography, culture. Illustrations of centralized and clustered massing in spatial organizations of masses in Architecture and its application to the practice of design with both historical as well as contemporary buildings. Study of different types of organizing patterns in different contexts like climate, topography, culture etc.
b) Linear, radial, grid organizations:
Illustrations of linear, radial, grid organization in spatial organizations of masses in Architecture and its application to the practice of design with both historical as well as contemporary buildings.

Unit – IV : Concepts of Form, Indian Traditional Architecture and Types of Theory in Architecture	Contact Hours = 10 Hours

a) Shape and Form: Primary shapes and Primary forms. Form-regular and irregular forms, transformation of forms and dimensional transformation, subtractive forms, subtractive and additive forms and its categories like centralized and linear forms.
b) Concepts of aesthetics in Indian Architectural ethos: Duality, Bipolarity, Spatial narratives, Kinesthetic.
c) Positive architectural theory: Procedural theory, Substantive theory. Normative architectural theory: Polemics and Practice.

Unit – V: Style and Perceptions in Architecture	Contact Hours =10Hours

a) Basis for classification of styles including chronology of styles arrangement according to order that changes over time. Evolution of styles; reflecting the emergence of new ideas as reaction to earlier styles as a result of changing trends, beliefs, technology.
b) Experience of architecture in basic psychological and physiological terms. Way in which human minds and bodies respond to space, light, texture, color, and other architectural elements.

Books	
	Reference Books:
1.	Pandya Yatin, Concepts of Space in Traditional Indian Architecture, Mapin India, 2005 onwards.
2.	Ching Francis D K, Form, Space and Order, Wiley, New Jersey, 1996 onwards.
3.	Parmar V S, Design Fundamentals in Architecture, Somaiya, New Delhi, 1997 onwards.
4.	Johnson Paul Alan: Theory of Architecture, 1994 onwards.
5.	Lang John, Creating Architectural Theory, Van Nostrand Reinhold, New York, 1987.
6	Pallasmaa Juhani ,Holl Steven ,Questions of Perception: Phenomenology of Architecture,2007
7	Trachtenberg Marvin and Hymen Isabelle, Architecture–Prehistory to Post-Modernism, Harry N. Abrams, B.V., The Netherlands. Edition 1990 and Onwards
8	Curtis William, Modern Architecture since 1900, Phaidon, London. Edition 1996 and Onwards.

Course delivery methods		Assessment methods	
1.	Chalk and Talk	1.	Internal Assessment Test
2.	PPT	2.	Course Activity Assessment
3.	Documentary Videos	3.	Semester End Examination

Course Outcome (COs) At the end of the course, the student will be able to			
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An- Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**
1.	**Explain** the aesthetic principles involved in architectural design.	**Un**	1,4
2.	**Illustrate and Compare** the Spatial Organizations of Masses in Architecture**,** Concepts of Form, Indian Traditional Architecture	**Un, An**	1,4
3.	**Analyze** the architectural form, composition , theory, styles, and Perceptions in Architecture.	**An**	1,4

Scheme of Continuous Internal Evaluation (CIE):			
Components	Addition of two IA tests	*Course Activity	Total Marks
Marks	40+40 = 80	20	100
Minimum score to be eligible for SEE: 50 OUT OF 100			

*Note:

- Course Activity will be evaluated as the outcome (sketches/model/Report/Monograph) of site visits/ Workshops/ Hands-on / Analytical understanding/ Theoretical Studies/ Documentation/Study tours/Design Process/Design walk.
- The content and mode of conduct of the Course Activity is the prerogative of the course faculty to suitably attain the COs and POs.

Scheme of Semester End Examination (SEE):	
1.	It will be conducted for 100 marks of 3 hours duration.
2.	**Minimum marks required in SEE to pass: Score should be ≥40% however overall score of CIE + SEE should be ≥50%**
3.	Question paper contains three parts **A, B and C**. Students have to answer 1. From Part A answer any 5 questions each Question carries 6 Marks. 2. From Part B answer any one full question from each unit and each Question carries 10 Marks. 3. From Part C answer any one full question and each Question carries 20 Marks.

CO-PO Mapping (Planned)												
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**
1	√			√								
2	√			√								
3	√			√								

Name & Signature of Faculty members involved in designing the syllabus

Name & Signature of Faculty verifying/approving the syllabus

WORKING DRAWING

Course Code	23DES5.3	Course type	SEC	Total credits	3
Hours/week: L-S-P	1– 0– 2			CIE Marks	100
Total Contact Hours	L = 14 Hrs; S = 0 Hrs; P = 28 Hrs Total = 42 Hrs			SEE Marks	100

Course learning objectives	
1.	To introduce Working drawing and its significance in Architectural practice.
2.	To introduce methodology of preparing working drawings and develop skills that equip students with an understanding of graphical conventions used in preparing Working Drawings that are `Good for Construction'.
3	To develop ability/skills to prepare details that integrate Architectural, Structural, Services and other disciplines for successful construction of the building project.

Pre-requisites : Knowledge of CAD.

Unit – I: Working Drawings	Contact Hours = 30 Hours

Preparation of Architectural Working drawings and details for a design project from earlier semester.
(The study shall demonstrate working drawings of a R.C.C framed building, not exceeding G+2 floors)

List of Working drawings:

a. Set of introductory drawings that showcase standard representation of drafting conventions: representation of materials, graphic symbols, line type conventions, gridlines, lettering, colour codes, paper sizes, title blocks, office practices, standardization of details.
b. Drawing to demonstrate auto cad drafting skills with ability to use line weights, hatch patterns, working blocks, templates, assemblies, libraries, layouts, plot styles, error checking, editing.
c. Statutory Building Approval Drawing.
   (Prepare Building Permission Drawing satisfying all building control regulations viz; FAR/FSI, Ground coverage, Built-up area calculations, Opening schedule and brief of construction technology and general specifications)
d. Site plan, Location plan.
e. Centre-line –Building Line out Plan, Foundation Setting plan and Column layout plan.
f. All floor plans and Roof plan along with basic structural and services components.
g. Building Sections; that include important building components viz; courtyards, atriums, staircases, verandah-balcony projections, toilets and service ducts.
h. All side building elevations.
i. Details of Staircase
j. Details of openings including Doors, Windows and Ventilators
k. Details of Window grills and Railings.

Unit – II: Service Drawings	Contact Hours = 12 Hours

a. Electrical drawing –Building illumination plan with notation and symbols.
b. Toilet Details showing Sanitary and Plumbing details with notation and symbols.
c. Details of Lift shaft.(if applicable)
d. Details of U.G.Water tank.
e. Details of Ramps, Retaining walls and Basement details (if applicable)

Books	
Reference Books:	
1.	Jefferis Alan and Madsen David A., Architectural Drafting and Design, Delmar Thomas Learning, USA. 1986 and onwards.
2.	Rams Architectural Graphics Standards, John Wiley and Sons Inc, USA. 2008 and onwards.
3.	Shah M.G, Kale C.M, Patki S.Y, Building Drawing: With an Integrated Approach to Built Environment, Tata McGraw Hill Education Pvt. Ltd,Delhi. 2001 and onwards.
4.	Ching Francis D K -Advanced Building Construction illustrated, John Wiley & Sons, Inc, Hoboken, New Jersey, Fourth edition 2001
5.	Osamu, A. W., Linde, R. M. and Bakhoum, N. R. The professional practice of Architectural working drawings. 4th Ed. Hoboken : John Wiley & Sons.,2011
6.	Joe, B. Details in Architecture: Vol. I-V. Victoria : The Images Publishing group.2002
7.	Bureau of Indian Standards (BIS); National Building Code of India, New Delhi.2016

Course delivery methods		Assessment methods	
1.	Chalk and Talk	1.	Reviews / Assignments
2.	PPT and Videos	2.	Course Activity Assessment
3.	Site Visits	3.	Semester End Examination
4.	Building Information Modelling (BIM) using Revit software		

Scheme of Continuous Internal Evaluation(CIE):			
Components	Reviews / Assignments	*Course Activity	Total Marks
Marks	40 + 40	20	100
Minimum score to be eligible for SEE: 50 OUT OF 100			

*Note:

- Course Activity will be evaluated as the outcome (sketches/model/Report/Monograph) of site visits/ Workshops/ Hands-on / Analytical understanding/ Theoretical Studies/ Documentation/Study tours/Design Process/Design walk.
- The content and mode of conduct of the Course Activity is the prerogative of the course faculty to suitably attain the COs and POs.

Scheme of Semester End Examination (SEE):	
1.	Viva Voce Examination will be conducted for 100 marks.
2.	**Minimum marks required in SEE to pass:** Score should be ≥ 40%, however overall score of CIE+SEE should be ≥50%.

Course Outcome (COs) At the end of the course, the student will be able to			
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**
1.	**Explain** the importance of Working drawings and its application in Architectural Practice and Building projects.	**Un, Ap**	1
2.	**Apply** the knowledge and skills of preparing working drawings to produce drawings that are `Good for Construction'	**Ap, Cr**	1,5
3.	**Apply** the skills to produce detailed drawings that can integrate Architectural, Structural, Services and other disciplines for successful construction of the building project.	**Ap, Cr**	5,10

CO-PO Mapping (Planned)												
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO 11**	**PO 12**
1	√											
2	√				√							
3					√					√		

Name & Signature of Faculty member involved in designing the syllabus

Name & Signature of Faculty verifying/approving the syllabus

BUILDING CONSTRUCTION AND MATERIALS – V

Course Code	23TEC5.1	Course type	BS&AE	Total credits	5
Hours/week: L-S-P	1– 4 – 0			CIE Marks	100
Total Contact Hours	L = 14 Hrs; S = 56 Hrs; P = 0 Hrs Total = 70 Hrs			SEE Marks	100

Course learning objectives	
1.	To study Construction of Roofing system for Large Span Structures.
2.	To study Complex Roofing Systems.
3.	To study Cladding Systems for Industrial Buildings
4.	To study Ferro cement as a building technique.
5.	To study Additives, Adhesives and Rubber as building materials.

Pre-requisites : Nil

Unit – I: Roofing systems – Steel Structures	**Contact Hours = 20 Hours**
Introduction to Steel trusses. a) Steel trusses for various spans and types. b) Typical details of a Ridge Truss c) Details at connections of a typical Saw-Tooth Truss for North Light and Lattice Girder. Tubular and d) L-angle trusses with 8-16m spans.	
Self-Learning Topic: To prepare a scaled study model of any one type of Steel Truss.	

Unit – II: Complex RCC Roof Structures	**Contact Hours = 12 Hours**
a) RCC Shell Roofs. b) RCC Domes, Vaults and Folded Plate. c) Prestressed (Pre-tensioned and Post-tensioned) Concrete Slabs.	
Self-Learning Topic : Case study of Works of Felix Candela, Frei Otto, Hassan Fathy ,P.L. Nervi, Sir Buckminster Fuller.	

Unit III: Introduction of Pre-engineering metal buildings, Cladding Systems and Roof Lighting Systems	**Contact Hours = 12 Hours**
a) Introduction to pre-engineering metal buildings. b) Detailing of a Pre-engineered building: Including Roof fixing details with aluminum sheet and profiled MS sheet cladding. c) Wall Cladding with Cement sheets, Calcium Silicate Boards, Fiber Cement Boards and Eco- friendly Boards. d) Wall Cladding with M.S. Profile sheets and Aluminum sheets. e) Roof lighting systems – Details of North Light Glazing, Skylights, Sky Domes f) Roof Ventilation systems.	

Unit IV: Complex Roof Structures	Contact Hours = 12 Hours
a) Geodesic Domes. b) Space Frames. c) Portal Frames d) Tensile Roof Structures and Pneumatic Structures.	
Self-Learning Topic: Case study of shell roofs and folded plates designed by renowned Architects like Eero Saarinen and Santiago Calatrava.	

Unit V: Building Techniques and Materials	Contact Hours = 14 Hours
a) Ferro cement. b) Additives and Adhesives in building materials. c) Rubber as a building material.	
Self-Learning Topic: To collect samples, rates and manufacturing information of additives and adhesives and rubber as a building material.	
NOTE: Site Visits and Documentation for each module and Study of material application shall form the part of portfolio.	

Reference Books:	
1.	Mackey W. B, Building Construction(1944), Volume 3, Orient Longman, London.
2.	Mackey W. B, Building Construction(1992), Volume 4, Orient Longman, London.
3.	Chudley R, Construction Technology(1976), Volume 3, ELBS, England.
4.	Barry R, Construction of Buildings(2008), Volume 2 and 4, EWP, New Delhi.
5.	Martin Bechthold, Daniel L Schodek , “STRUCTURES”(2009); PHI Learning Private limited.
6.	Fernandez, John (1963),Material Architecture: Emergent Materials for Innovative Buildings and Ecological Construction.
7.	Lyons Arthur (2014), “Materials for Architects and Builders”, Fifth Edition, Routledge.
8.	Varghese P.C. (2015), “Building Materials”, Second Edition, PHI Learning Pvt. Ltd.
9.	K.Heki, (ed.), Shells, Membranes and Space Frames.

Course delivery methods		Assessment methods	
1.	PPT and Videos	1.	Progressive Portfolio Assessment/Review
2.	Case Study	2.	Course Activity Assessment
3.	Site Visits	3.	Semester End Examination
4.	Models		

Course Outcome (COs) At the end of the course, the student will be able to			
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**
1.	**Explain** the principles and methods of roofing for large span structures.	**Un**	1
2.	**Demonstrate** construction techniques of Cladding Systems and Roof Lighting Systems for Industrial Buildings.	**Un**	1, 5
3.	**Demonstrate** various types of complex roofing systems.	**Un**	1 ,5
4.	**Explain** the uses of Ferro cement. Additives and Adhesives as building materials	**Un**	1

Scheme of Continuous Internal Evaluation (CIE):			
Components	Addition of 2 Reviews (Including Materials)	*Course Activity	Total Marks
Marks	40+40	20	100
Minimum score to be eligible for SEE: 50 OUT OF 100			

*Note:

- Course Activity will be evaluated as the outcome (sketches/model/Report/Monograph) of site visits/ Workshops/ Hands-on / Analytical understanding/ Theoretical Studies/ Documentation/Study tours/Design Process/Design walk.
- The content and mode of conduct of the Course Activity is the prerogative of the course faculty to suitably attain the COs and POs.

Scheme of Semester End Examination (SEE):	
1.	Viva Voce Examination will be conducted for 100 marks.
2.	**Minimum marks required in SEE to pass:** Score should be ≥ 40%, however overall score of CIE+SEE should be ≥50%.

CO-PO Mapping (Planned)												
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO 11**	**PO 12**
1	√											
2	√				√							
3	√				√							
4	√											

Name & Signature of Faculty member involved in designing the syllabus

Name & Signature of Faculty verifying/approving the syllabus

HVAC, Vertical Transportation and Fire Safety

Course Code	23TEC5.2	Course type	BS & AE	Total credits	3
Hours/week: L - S- P	3 – 0 – 0			CIE Marks	100
Total Contact Hours	L = 42 Hrs; S = 0 Hrs; P = 0 Hrs Total = 42 Hrs			SEE Marks	100

Course learning objectives	
1.	To develop the knowledge regarding essential Mechanical services required in buildings.
2.	To enable the students to understand the importance of modern mechanical systems and their integration with Architectural Planning to achieve a comfortable and safe environment.

Unit – I: Introduction to Mechanical Ventilation	Contact Hours = 08 Hours

a) Indoor Air Quality for comfortable habitable conditions, Need for Mechanical Ventilation in buildings, Rate of Ventilation for different occupancies.
b) Methods and equipment used in Mechanical Ventilation systems, Introduction to various types of fans and filters used. Humidifiers and dehumidifiers.
c) Social and Environmental Issues related to conventional Refrigeration and Air-conditioning.
d) Introduction to Air Conditioning- Definition, Purpose, Advantages and Disadvantages.
e) Air cycle and Refrigeration cycle.

Unit – II: Air Conditioning	Contact Hours = 10 Hours

a) Summer and Winter Air Conditioning Systems, Factors considered in calculation of Air Conditioning loads.
b) Zoning in Air-conditioning, Purpose and Advantages. Transmission and distribution of Conditioned Air, Ducts and Duct systems. Basics of duct sizing and routing, preferred locations of equipment and Architectural Requirements of various equipment. Illustration of duct layout through a small example.
c) Air Conditioning methods and equipment for Residential and Commercial use: Split and Central Air Conditioning systems. Location of Air Conditioning equipment in buildings. Architectural requirements of various equipment, equipment room for Central Air Conditioning Plant.
d) Introduction of energy efficient measures in Air-conditioning.
e) Introduction to the concept of 'Clean Room' and its Architectural requirements.
f) Introduction to terminologies like BRI (Building Related Illnesses), SBS (Sick Building Syndrome), GWP (Global Warming Potential) and (ODP) Ozone Depletion Potential.
g) Study of schematic layouts of Air Conditioning systems in different buildings.
A) Commercial Building typical floor B)Seminar hall/ Auditorium.

Self-learning topics: HVAC Strategies for Energy Efficiency in Green Building Rating Systems: Comparative Study of LEED, GRIHA, and IGBC.

Unit – III: Elevators (Lifts) and Escalators and Travelators	Contact Hours = 10 Hours

a) Brief history, Systems of Elevators like Traction and Hydraulic.
b) Types of Lifts- Passenger, Hospital, Goods, Dumb Waiter and Double-Decker. Sky lobby, Lift lobby and Lift interiors.
c) Elevatoring a building: Design considerations – Typology of buildings, location in building, serving floors, grouping, size, shape of passenger car and door arrangements.
d) Service requirements, Quality and Quantity of services, time, passenger handling capacity, space and physical requirements, machine room spaces and typical layout of machine room, machine room less elevator.
e) Escalator- Definition, application,typologies, location and arrangement in buildings, space requirements, working mechanism of escalators.
f) Conveyor belt and Travelators - Definition,application, location and arrangement in buildings, space requirements, working mechanism of travelators.

Self-learning topics: Smart and Sustainable Vertical Transportation: Innovations in Energy-Efficient Elevator Systems for Green Buildings.

Unit – IV: Fire Safety In Buildings & Passive Fire Protection	Contact Hours = 07 Hours
a) Causes of fire, Reasons for loss of life due to fire, development of fire, fire load, fire hazards, Grading of structural elements due to fire and classification of building types as per National Building Code (NBC). b) Characteristics of Combustible and Non-Combustible materials in case of Fire. Concept of Golden hour in building fire accidents. c) Concepts of Passive fire protection and control - including Design of escape routes, Fire safety measures in Lifts, fire driveways, fire refuge area, fire assembly areas, travel distance, fire tower and fire signage etc. Pressurization and Compartmentation. d) Signage and Wayfinding Systems for Fire Emergencies: Global vs NBC Standards	
Self-Learning Topics: Case studies on Passive Fire Protection Measures in buildings.	

Unit – V : Active Fire Protection; Fire Safety In High Rise Buildings	Contact Hours = 07 Hours
a) Active fire control using portable extinguishers. Basic concepts of fire fighting. installations, Automatic fire detection and alarm systems, Planning of Fire control room. b) Fire safety measures for Basements. c) AI-Based Tools and Technologies in Fire Safety. d) Measures for fire protection and firefighting requirements for High-rise buildings in India.	
Self-Learning Topics: Case Study of Active Fire Protection measures in a building.	

Books	
	Text Books:
1.	F. C. McQuiston, J. D. Parker, and J. D. Spitler, *Heating, ventilating, and air conditioning: Analysis and design*, 7th ed., reprinted 2023. Hoboken, NJ: Wiley, 2015.
2.	G. R. Strakosch and R. S. Caporale, *Vertical transportation handbook*, 4th ed. Hoboken, NJ: Wiley, 2010.
3.	G. Barney, *Elevator traffic handbook: Theory and practice*, 2nd ed., reprinted 2022. Abingdon, UK: Routledge, 2016.
4.	M. M. Sulsenti, *Fire safety in buildings*. New Delhi: CBS Publishers, 2020.
5.	Das Akhil K., Principles of Fire Safety Engineering: Understanding Fire and Fire Protection, PHI Learning Pvt. Ltd, New Delhi,2014
6.	Jain V. K, Fire Safety in Buildings, New Age International Pvt. Ltd, Hyderabad,2010
7.	ASHRAE, *ASHRAE handbook – HVAC systems and equipment*. Atlanta, GA: ASHRAE, 2024
8.	Central Public Works Department, *CPWD handbook on building services*. New Delhi: Government of India, 2023.

	References:
1.	**Relevant IS Codes of India** i. 1391 (Part 1 & 2): 1992 - Specification for room air conditioners ii. 8148: 2003 - Specification for packaged air conditioners iii. 4591: 1968 - Code of practice for installation and maintenance of escalators iv. 14671: 1999 - Hydraulic lifts v. 14665: 2000 - Traction lift vi. 15259: 2002 - Home Lifts vii. 15330 : 2003 - Lifts for handicapped persons; IS codes for Fire Services
2.	Bureau of Indian Standards. (2016). National Building Code of India. New Delhi.
	E-resources (NPTEL/SWAYAM, Any Other)
1.	https://ndl.iitkgp.ac.in
2.	http://fairconditioning.org/knowledge-resources/#209-active-cooling

Course delivery methods		**Assessment methods**	
1.	Chalk and Talk	1.	IA tests
2.	PPT and Videos	2.	Course Activity Assessment
3.	Site study visits and reports	3.	Semester End Examination
4.	Market study and analysis		
5.	Seminars		

Course Outcome (COs) At the end of the course, the student will be able to,			
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**
1.	**Explain** the importance of mechanical systems and safety requirements and services in a building.	Un	1
2.	**Explain** the need, quantity and quality of mechanical services for various buildings and their design considerations.	Un	1
3.	**Explain** and illustrate the various AC, lifts, escalators and fixtures to serve the occupants and other safety fittings that contain fire accidents in buildings.	Un	1
4.	**Explain** layouts of AC and mechanical lifting systems in various building typologies, and energy efficient measures in air conditioning systems..	Un	1, 3, 7
5.	**Illustrate** basics of duct sizing and routing in AC systems, active and passive fire safety system details and layouts in a building.	Ap, Cr	1, 3

Scheme of Continuous Internal Evaluation (CIE):			
Components	Addition of two IA tests	*Course Activity	Total Marks
Marks	40+40 = 80	20	100
Minimum score to be eligible for SEE: 50 OUT OF 100			

*Note:

- Course Activity will be evaluated as the outcome (sketches/model/Report/Monograph) of site visits/ Workshops/ Hands-on / Analytical understanding/ Theoretical Studies/ Documentation/Study tours/Design Process/Design walk.
- The content and mode of conduct of the Course Activity is the prerogative of the course faculty to suitably attain the COs and POs.

Scheme of Semester End Examination (SEE):	
1.	It will be conducted for 100 marks of 3 hours duration.
2.	**Minimum marks required in SEE to pass: Score should be ≥40% however overall score of CIE + SEE should be ≥50%**
3.	Question paper contains three parts **A, B and C**. Students have to answer 1. From Part A answer any 5 questions each Question carries 6 Marks. 2. From Part B answer any one full question from each unit and each Question carries 10 Marks. 3. From Part C answer any one full question and each Question carries 20 Marks.

CO-PO Mapping (Planned)												
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**
1	√											
2	√											
3	√											
4	√		√				√					
5	√		√									

Name & Signature of Faculty member involved in designing the syllabus

Name & Signature of Faculty verifying/approving the syllabus

PRINCIPLES OF ADVANCED STRUCTURAL FORMS

Course Code	23TEC 5.3	Course type	BS & AE	Total credits	3
Hours/week: L - S- P	3 – 0 – 0			CIE Marks	100
Total Contact Hours	L = 42 Hrs; S = 0 Hrs; P = 0 Hrs Total = 42 Hrs			SEE Marks	100

Course learning objectives	
1.	To understand the concept and application of pre-stressed concrete.
2.	To analyze the stresses, Pressure line and concept of load balancing.
3.	To analyze the different types of losses in prestressed concrete.
4	To understand the basics of special structural form.
5	To develop understanding of the concept of RC-detailing.

Unit I: Introduction to Pre-stressed concrete	Contact Hours = 06 Hours
a) Basic concepts of pre-stressed concrete. b) Materials used in pre-stressed concrete -High strength concrete and high strength steel c) Different types of pre-stressing systems. d) Advantages of pre-stressed concrete. e) Application of pre-stressed concrete.	

Unit II: Analysis of Pre-stress sections under flexure	Contact Hours = 12 Hours
a) Basic assumptions. b) Analysis for flexure. c) Resultant stresses at a section. d) Pressure Line or Thrust line e) Concept of Load Balancing.	

Unit III: Losses in Pre-stressing	Contact Hours = 10 Hours
a) Nature of losses of Pre-stress. b) Loss due to Elastic Deformation of Concrete. c) Loss due to Shrinkage of Concrete. d) Loss due to Creep of Concrete. e) Loss due to Relaxation of stress in steel. f) Loss of stress due to friction. g) Loss due to Anchorage slip. h)Total losses allowed for in design.	

Unit IV: Special structural forms	Contact Hours = 06 Hours
a) Introduction to special structural forms b) Basic structural concepts and illustration of Shells, Folded plates, Domes, Grid structures, Flat slabs (RCC), Space frames, Tensile structures and Pneumatic structures. (no problems).	
Self-learning topic: Graphical illustration of any special structural form with an example.	

Unit V: Detailing of structural elements	Contact Hours = 08 Hours
a) Detailing of RC Beam (singly and doubly reinforced) b) Detailing of RC Slab (one way and two way) c) Detailing of RC Column footing (square isolated) d) Detailing of dog-legged staircase.	
Self-learning topic: Study of any structural form (hybrid structure) with an example.	

Books	
1	Krishna Raju .N: Pre-stressed concrete, Tata McGraw-Hill Publishing Company Limited Publications, New Delhi, Fifth Edition (2013) and onwards.
2	Schodek Daniel: Structures, Pearson, Seventh edition (July 25, 2013) and onwards.
3	Krishna Raju N. and Pranesh RN. : RCC-Design and Practice, Published by New Age International (P) Limited (2014), First Edition and onwards.

Course delivery methods		Assessment methods	
1.	Chalk and Talk	1.	Internal Assessment Test
2.	PPTS	2.	Course Activity Assessment
3.	Documentary Videos	3.	Semester End Examination

Course Outcome (COs) At the end of the course, the student will be able to			
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An- Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**
1.	**Explain** the importance and application of pre-stressed concrete**,**	**Un**	1,2
2.	**Analyze** the stresses, Pressure line and concept of load balancing by applying the concept of pre-stressing	**Ap, An**	1,2,3,4
3.	**Analyze** the different types of losses in prestressed concrete.	**An**	1,2,4
4.	**Explain** the basics of special structural form.	**Un**	1,5
5.	**Demonstrate** through drawings the concept of RC-detailing.	**Un**	1,10

Scheme of Continuous Internal Evaluation (CIE):			
Components	Addition of two IA tests	*Course Activity	Total Marks
Marks	40+40 = 80	20	100
Minimum score to be eligible for SEE: 50 OUT OF 100			

*Note:

- Course Activity will be evaluated as the outcome (sketches/model/Report/Monograph) of site visits/ Workshops/ Hands-on / Analytical understanding/ Theoretical Studies/ Documentation/Study tours/Design Process/Design walk.
- The content and mode of conduct of the Course Activity is the prerogative of the course faculty to suitably attain the COs and POs.

Scheme of Semester End Examination (SEE):	
1.	It will be conducted for 100 marks of 3 hours duration.
2.	**Minimum marks required in SEE to pass: Score should be ≥40% however overall score of CIE + SEE should be ≥50%**
3.	Question paper contains three parts **A, B and C**. Students have to answer 1. From Part A answer any 5 questions each Question carries 6 Marks. 2. From Part B answer any one full question from each unit and each Question carries 10 Marks. 3. From Part C answer any one full question and each Question carries 20 Marks.

CO-PO Mapping (Planned)												
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**
1	√	√										
2	√	√	√	√								
3	√	√		√								
4	√				√							
5	√									√		

Name & Signature of Faculty member involved in designing the syllabus

Name & Signature of Faculty verifying/approving the syllabus

RENAISSANCE ARCHITECTURE TO MODERN ARCHITECTURE

Course Code	23HUM5.1	Course type	PC	Total credits	3
Hours/week: L - S- P	3 – 0 – 0			CIE Marks	100
Total Contact Hours	L = 42 Hrs; S = 0 Hrs; P = 0 Hrs Total = 42 Hrs			SEE Marks	100

Course learning objectives	
1	To develop an understanding of the evolution of architectural styles from Renaissance to Modernism.
2	To enable the students to understand and analyze the Impact of Industrial Revolution in Europe.
3	To analyze the principles; core ideas and philosophies that shaped each style of architecture.

Unit–I : Renaissance and Baroque Architecture	Contact Hours = 08 Hours
a) Renaissance Architecture: Background and influences on Renaissance Architecture. Critical appreciation of works and synoptic study of Architectural characteristic features: e.g. St. Andrea, Mantua and Palazzo Rucellai, Florence by Leon Alberti; Villa Rotunda (Capra), Vicenza by Andrea Palladio; St. Peter by Michelangelo; Rome and St. Paul's Cathedral, by Sir Christopher Wren; London. b) Baroque Architecture: Critical appreciation of works and synoptic study of Architectural characteristic features: e.g. St. Peter's Piazza, Rome by Bernini and Palace of Versailles, Paris by Louis Le Vau.	
Self-Learning Topics: Santa Maria Novella; Florence; Italy; Villa Barbaro; Italy; Study of Dome of Florence by Filippo Brunelleschi.	

Unit–II : Revivals	Contact Hours = 08 Hours
Introduction, Critical appreciation of works and synoptic study of Architectural characteristic features, Study of Design principles - a) A brief account of the situation before the changeover to Modern Architecture in Europe. b) Palladian Revival: e.g. Chiswick House, London. c) Greek Revival: e.g. St. Pancras Church, London. d) Gothic Revival: e.g. Palace of WestMinster, London.	
Self-Learning Topics: Study of Mereworth Castle, Kent and Arc de Triomphe, Paris	

Unit – III: Impact of Industrial Revolution in Europe	Contact Hours = 08 Hours

Introduction, Critical appreciation of works and synoptic study of Architectural characteristic features. Study of Design principles-

a) Social, Economic, Political, Technological and Material changes affecting society due to Industrial Revolution.
b) Early Industrial Buildings: e.g. Crystal Palace, London and Eiffel Tower, Paris.
c) Movements after Industrial Revolution: Arts and Crafts Movement- Ideas and works of William Morris: e.g. Red House, Kent; Art Nouveau Movement- Ideas and works of Antonio Gaudi, Victor Horta and Hector Guimard : e.g. Casa Mila, Barcelona; Tassel House, Brussels; Paris Metro Entrances, Paris.

Self-Learning Topics- Sagrada Familia Church, Barcelona, Spain; Casa Batlo, Barcelona, Spain.

Unit – IV : Early Modern Movements	Contact Hours = 08 Hours

a) Chicago School: Ideas and works of Louis Sullivan: e.g. Wain Wright Building and Guaranty Building, Chicago.
b) Bauhaus School: Ideas and works of Walter Gropius: e.g. Fagus Factory, Germany and Bauhaus School at Dessau.
c) De Stijl movement: Ideas and works of Gerrit Rietveld: e.g. Schroder House, Netherlands.

Unit – V: Modern Architecture- Theories and Works of Great Masters	Contact Hours =10 Hours

Introduction, Critical appreciation of works and synoptic study of Architectural characteristic features.

a) Le Corbusier: Humanist Mechanomorphism and Five points of Architecture- e.g. Villa Savoye, Paris; Brutalism- e.g. Unite de Habitation, Marseilles, France and Surrealism: e.g. Notre-Dame du Haut, Ronchamp, France.
b) Frank Lloyd Wright: Organic Architecture- e.g. Robie House, Chicago, Falling Waters, Pennsylvania and Guggenheim Museum, New York.
c) Mies van der Rohe: Less is More- e.g. Barcelona Pavilion, Barcelona; Dr Farnsworth House, Illinois; God is in Detail: e.g. Seagram Building, Manhattan.
d) Oscar Niemeyer: Sculptor of Monuments- e.g. National Congress Complex and Metropolitan Cathedral, Brasilia.

Self-Learning Topics: Study of Johnson Wax Building, Racine, Wisconsin; Crown Hall MIT, Illinois and Alvorada Palace, Brasilia.

Books	
	Reference Books:
1.	Frampton Kenneth; Modern Architecture –A Critical History, Thames and Hudson, London, Edition 1985 and Onwards.
2.	Trachtenberg Marvin and Hymen Isabelle; Architecture–Prehistory to Post-Modernism, Harry N. Abrams, B.V., The Netherlands, Edition 1990 and Onwards.
3.	Curtis William; Modern Architecture since 1900, Phaidon, London, Edition 1996 and Onwards.
4.	Fletcher Banister; A History of Architecture, CBS publishers and distributors, New Delhi, Edition 1975 and Onwards.
5	Siegfried Gideon; Time, Space and Architecture, Harvard University Press Cambridge, Massachusetts London, England, Fifth Edition 2008.
6	Jencks, Charles; Modern movements in architecture, Garden City, N.Y., Anchor Press, 1st, First Edition 1973 Onwards.

Course delivery methods		Assessment methods	
1.	Chalk and Talk	1.	Internal Assessment Test
2.	PPT	2.	Course Activity Assessment
3.	Documentary Videos	3.	Semester End Examination
4.	VR Videos		

Course Outcome (COs) At the end of the course, the student will be able to			
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An- Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**
1.	**Explain** the architectural characteristics of the following styles – Renaissance, Baroque and Revivals by identifying various Architectural elements, cultural and religious influence on Architecture.	**Un**	1
2.	**Explain** the Impact of the Industrial Revolution in Europe.	**Un**	1
3.	**Identify and Distinguish** the architectural characteristics of the Early Modern Movements.	**Un, An**	1,4
4.	**Compare and Analyze** the theories and works of Great Masters.	**An**	1,4

Scheme of Continuous Internal Evaluation (CIE):			
Components	Addition of two IA tests	*Course Activity	Total Marks
Marks	40+40 = 80	20	100
Minimum score to be eligible for SEE: 50 OUT OF 100			

*Note:

- Course Activity will be evaluated as the outcome (sketches/model/Report/Monograph) of site visits/ Workshops/ Hands-on / Analytical understanding/ Theoretical Studies/ Documentation/Study tours/Design Process/Design walk.

- The content and mode of conduct of the Course Activity is the prerogative of the course faculty to suitably attain the COs and POs.

Scheme of Semester End Examination (SEE):	
1.	It will be conducted for 100 marks of 3 hours duration.
2.	**Minimum marks required in SEE to pass: Score should be ≥40% however overall score of CIE + SEE should be ≥50%**
3.	Question paper contains three parts **A, B and C**. Students have to answer 1. From Part A answer any 5 questions each Question carries 6 Marks. 2. From Part B answer any one full question from each unit and each Question carries 10 Marks. 3. From Part C answer any one full question and each Question carries 20 Marks.

CO-PO Mapping (Planned)												
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**
1	√											
2	√											
3	√			√								
4	√			√								

Name & Signature of Faculty members involved in designing the syllabus

Name & Signature of Faculty verifying/approving the syllabus

STUDY TOUR

Course Code	23HUM5.2	Course type	MNC	Total credits	MNC
Hours/week: L - S- P				CIE Marks	100
Total Contact Hours				SEE Marks	

Course learning objectives
1. To explore and study various architectural styles and building typologies 2. To analyze the evolution of architecture in different historical and cultural contexts. 3. To develop skills in documenting architectural observations and presenting the findings.
Architectural study tour is to be undertaken after the end of IV semester exam and before the commencement of V semester classes. This assignment could be for visiting places of Architectural interest or measured drawing and documentation of a noted building. The assignment may be given as group work. The students have to submit a report or the measured drawing within 15 days from the beginning of the V semester which will be assessed for progressive marks.

Course Outcome (COs) At the end of the course, the student will be able to,			
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**
1.	**Identify** and document architectural landmarks and notable buildings	**Un,Ap**	1,2,3
2.	**Demonstrate** the documentation skills by presenting architectural case studies through graphical representation and report. (e.g., sketches, diagrams, photographs)	**Ap**	1,9,12

Scheme of Continuous Internal Evaluation (CIE):			
Components	Portfolio/ Report Marking	*Course Activity	Total Marks
Marks	80	20	100
➢ Note: This subject does not have a Semester End Examination (SEE). ➢ **Minimum marks required to pass CIE: 50 out of 100**			

*Note:

- Course Activity will be evaluated as the outcome (sketches/model/Report/Monograph) of site visits/ Workshops/ Hands-on / Analytical understanding/ Theoretical Studies/ Documentation/Study tours/Design Process/Design walk.

- The content and mode of conduct of the Course Activity is the prerogative of the course faculty to suitably attain the COs and POs.

Scheme of Semester End Examination (SEE):	
	No SEE Examination will be conducted for this subject.

CO-PO Mapping (Planned)												
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**
1	√	√	√									
2	√								√			√

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ELECTIVE-III: COST EFFECTIVE DESIGN

Course Code	23APE5.11	Course type	PE	Total credits	3
Hours/week: L-S-P	3–0-0			CIE Marks	100
Total Contact Hours	L=42 Hrs; S=0 Hrs; P=0 Hrs Total= 42 Hrs			SEE Marks	-

Course learning objectives	
1.	To understand the meaning of Cost effective design.
2.	To identify the various building construction techniques, materials applied in Cost effective design of structures.
3.	To study the initiatives of non- profit organizations which are into research and promote cost effective design.

Outline	Contact Hours = 42 Hours

Cost – effective Design of a structure optimizes the various aspects of construction without reducing the quality of the final product. Cost–effectiveness does not mean sub-standard or poor quality structure. It involves strategies intended to optimize resources, technology, material utilization and maximum efficiency of the structure.

This course aims to introduce and give an overview of:

a) Meaning of Cost-effectiveness in architecture.
b) Costs involved during building construction.
c) Factors influencing application of cost-effective techniques in construction.
d) Cost-effective design strategies and construction techniques.
e) Cost-effective building materials.
f) Contributions of organizations like Hunnarshala Foundation, COSTFORD, Dharmalay Institute, the Earth Institute, Auroville and others in propagating cost – effectiveness in architecture.
g) Case Studies of cost-effective buildings.

Books	
	Reference Books :
1.	Baker Laurie, Houses: How to Reduce Building Costs, COSTFORD: Center of Science and Technology for Rural Development.
2.	Baker Laurie, A Manual for Cost Cuts for Strong Acceptable Housing, COSTFORD: Center Of Science and Technology For Rural Development.
3.	Minke Gernot, Earth Construction Handbook: The Building Material Earth in Modern Architecture, WIT Press, Southampton, Boston.
	e-references
1.	Environment Friendly Indian Building Material Technologies for Cost Effective Housing, SocietyFor Excellence In Habitat Development, Environment Protection and Employment Generation (SHEE)
2.	Demonstrating Cost Effective Technologies (A Case Study of Bawana Industrial Workers Housing Project) Building Materials & Technology Promotion Council (BMTPC)Ministry of Housing and Urban Affairs, Government of India.
3.	Utilisation of Recycled Produce of Construction & Demolition Waste: A Ready Reckoner, Building Materials & Technology Promotion Council (BMTPC)Ministry of Housing and Urban Affairs, Government of India.
4.	Srivastava Ayush, (2014). Cost Effective and Innovative Housing Technology, National Institute of Construction Management and Research, International Journal for Scientific Research and Development

Course delivery methods		Assessment methods	
1.	Chalk and Talk	1.	Progressive Portfolio/Assessment Report
2.	PPT ,Videos and documentary	2.	Course Activity

NOTE: Study culminates in the form of a report.

Course Outcome (COs) At the end of the course, the student will be able to ,			
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An- Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**
1.	**Explain** the meaning of cost effective Design.	**Un**	1
2.	**List** and **Analyze** various cost effective construction techniques and strategies in design through case studies.	**Un, An**	1,2

Scheme of Continuous Internal Evaluation(CIE):			
Components	Report / Portfolio Marking	*Course Activity	Total Marks
Marks	80	20	100
Minimum score to be eligible for passing in the subject: 50 OUT OF 100			

*Note:

- Course Activity will be evaluated as the outcome (sketches/model/Report/Monograph) of site visits/ Workshops/ Hands-on / Analytical understanding/ Theoretical Studies/ Documentation/Study tours/Design Process/Design walk.

- The content and mode of conduct of the Course Activity is the prerogative of the course faculty to suitably attain the COs and POs.

Scheme of Semester End Examination(SEE):
• Note: This subject does not have Semester End Examination (SEE). • Minimum marks required to pass CIE: 50 out of 100

CO-PO Mapping (Planned)												
CO	**PO1**	**PO2**	**PO3**	**PO 4**	**PO 5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**
1	√											
2	√	√										

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ELECTIVE-III: BIOMIMICRY

Course Code	23APE5.12	Course type	PE	Total credits	3
Hours/week: L-S-P	3–0-0			CIE Marks	100
Total Contact Hours	L=42 Hrs; S=0 Hrs; P=00 Hrs Total= 42 Hrs			SEE Marks	-

Course learning objectives	
1.	To introduce the innovative approach to design that takes inspiration from nature's patterns, strategies, and forms.
2.	To identify the biological processes and functions in architecture to create sustainable structures.
3.	To understand the material innovation and integration into building designs.

Outline	Contact Hours = 42 Hours

Biomimicry in architecture involves studying and imitating natural patterns, systems, and processes to create structures that are both aesthetically pleasing and environmentally responsible. Biomimicry can foster a regenerative approach to design, where buildings not only function well but also contribute to the well-being of the surrounding environment. It has a sustainable approach to mitigate climate change through form-function relationships, waste reduction, life cycles, innovative materials, structural systems and construction techniques.

Objectives:

1. Introduction to Biomimicry, history and evolution of biomimicry in design.
2. Biomimicry in Nature: Understanding adaptation, principles and sustainability in nature.
3. Biomimicry in Design: Analyzing nature's patterns, processes and strategies and understanding its application in architectural design. Case studies of biomimicry-inspired buildings, structural systems to attain environmental friendly design solutions.
4. Innovative materials and technology: To study the emerging technologies and materials inspired by nature and its application in architectural designs.
5. Challenges and Opportunities: Understanding the limitations and challenges in Biomimicry. Opportunities for innovation and emerging trends and its impact on the built environment.

Books	
	Reference Books :
1.	Pawlyn Michael, Biomimicry in Architecture 2011 by RIBA Publishing
2.	Benyus Janine M. Biomimicry: Innovation Inspired by Nature September 17, 2002 by Harper Perennial
3.	Senosiain Javier, Bio-Architecture 2003 by Elsevier Ltd.

Course delivery methods		Assessment methods	
1.	Chalk and Talk	1.	Progressive Portfolio/assessment report
2.	PPT and Videos	2.	Course Activity

NOTE: Study culminates in the form of a report.

Course Outcome (COs) At the end of the course, the student will be able to ,			
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An- Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**
1.	**Identify and Explain** the form and function of Biomimicry in architecture.	**Un**	1
2.	**Understand and Analyze** the adaptation of nature inspired forms, materials, technologies to make buildings sustainable by studying iconic and emerging case studies.	**Un, An**	1,2

Scheme of Continuous Internal Evaluation(CIE):			
Components	Report / Portfolio Marking	*Course Activity	Total Marks
Marks	80	20	100
Minimum score to be eligible for passing in the subject: 50 OUT OF 100			

*Note:

- Course Activity will be evaluated as the outcome (sketches/model/Report/Monograph) of site visits/ Workshops/ Hands-on / Analytical understanding/ Theoretical Studies/ Documentation/Study tours/Design Process/Design walk.
- The content and mode of conduct of the Course Activity is the prerogative of the course faculty to suitably attain the COs and POs.

Scheme of Semester End Examination(SEE):
• Note: This subject does not have Semester End Examination (SEE). • Minimum marks required to pass CIE: 50 out of 100

CO-PO Mapping (Planned)												
CO	**PO1**	**PO2**	**PO3**	**PO 4**	**PO 5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**
1	√											
2	√	√										

Name & Signature of Faculty members involved in designing the syllabus

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ELECTIVE-III: ECO FRIENDLY ARCHITECTURE

Course Code	23APE5.13	Course type	PE	Total credits	3
Hours/week: L-S-P	3–0-0			CIE Marks	100
Total Contact Hours	L=42 Hrs; S=0 Hrs; P=00 Hrs Total= 42 Hrs			SEE Marks	-

Course learning objectives	
1.	To introduce students to the Concepts of Eco-friendly Architecture.
2.	To enable students to understand and apply the principles of eco-friendly Architecture.

Outline	Contact Hours = 42 Hours

Eco-friendly architecture involves design and construction of buildings that reduce harm to the environment by using natural resources wisely and minimizing waste and pollution. Studying eco-friendly architecture will help protect the planet, conserve energy, and create healthier spaces for people to live and work.

The elective aims to develop an understanding of Environment, Ecology and the techniques that are required for the design of buildings and their surroundings in a climate-responsive manner.

The course introduces and gives an overview of:

a) Introduction to Ecology
b) Correlation between the environment and society.
c) Eco-Friendly Materials and its uses.
d) Case Studies of Eco-Friendly Architecture
e) Design strategies of ecologically sensitive site contexts and construction techniques in Eco Friendly Architecture.

Books	
1.	Sharma P D “Ecology and Environment”.Rastogi Publications, January 2011
2.	Lynch Kevin and Hack Gary, Site Planning, Third Edition, The MIT Press, Cambridge
3.	Ian L. McHarg,. “Design with nature”,1995
4.	John Simonds,. “Landscape Architecture: A Manual of Site Planning and Design, 1997.
5.	Frank Lloyd Wright, “Natural Design, Organic Architecture: Lessons for Building Green from an American Original”.

Course delivery methods		Assessment methods	
1.	Chalk and Talk	1.	Progressive Portfolio/Assessment Report
2.	PPT and Videos	2.	Course Activity

NOTE: Study culminates in the form of a report.

Course Outcome (COs) At the end of the course, the student will be able to ,			
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An- Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**
1.	**Explain** the concepts of eco-friendly Architecture.	**Un**	1
2.	**Understand and Analyze** the principles of eco-friendly Architecture through case studies.	**Un, An**	1,2,4,7
3.	**Develop** design strategies to achieve eco-friendly Architecture.	**Un, Ap**	1,2,4,7

Scheme of Continuous Internal Evaluation (CIE):			
Components	Report / Portfolio Marking	*Course Activity	Total Marks
Marks	80	20	100
Minimum score to be eligible for passing in the subject: 50 OUT OF 100			

*Note:

- Course Activity will be evaluated as the outcome (sketches/model/Report/Monograph) of site visits/ Workshops/ Hands-on / Analytical understanding/ Theoretical Studies/ Documentation/Study tours/Design Process/Design Walk.
- The content and mode of conduct of the Course Activity is the prerogative of the course faculty to suitably attain the COs and POs.

Scheme of Semester End Examination (SEE):
• Note: This subject does not have Semester End Examination (SEE). • Minimum marks required to pass CIE: 50 out of 100

CO-PO Mapping (Planned)												
CO	**PO1**	**PO2**	**PO3**	**PO 4**	**PO 5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**
1	√											
2	√	√		√			√					
3	√	√		√			√					

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ELECTIVE-III: INDIAN TRADITIONAL KNOWLEDGE SYSTEMS IN ARCHITECTURE

Course Code	23APE5.14	Course type	PE	Total credits	3
Hours/week: L - S- P	3 – 0 – 0			CIE Marks	100
Total Contact Hours	L = 42 Hrs; S = 0 Hrs; P = 0 Hrs Total = 42 Hrs			SEE Marks	-

Course learning objectives:	
1.	To understand Indian traditional knowledge systems: principles like Vastu Shastra, Shilpa Shastra, and sacred geometry.
2.	To introduce traditional sustainable techniques: indigenous materials and climate-responsive methods.

Outline	Contact Hours =42 Hours

The elective Indian Traditional Knowledge Systems (ITKS) in Architecture introduces traditional architectural principles, spatial design, sustainability, and cultural heritage. It emphasizes the importance of ITKS in preserving vernacular techniques and sacred spaces. The course focuses on traditional principles, vernacular methods, sacred spaces, and conservation strategies, with an in-depth study of any one aspect supported by relevant case studies.

a) Introduction to ITKS – Understanding traditional knowledge systems, their relevance, and Characteristics of ITKS.
b) Principles of Indian Architecture – Vastu Shastra, Shilpa Shastra, sacred geometry, and elemental balance in design.
c) Sustainable & Vernacular Architecture – Indigenous materials, climate-responsive design, and regional building techniques.
d) Temple & Urban Planning – Hindu, Buddhist, Jain, and Indo-Islamic styles, with ancient city layouts and water systems.
e) Sacred & Ritual Spaces – Symbolism in architecture, pilgrimage sites, and landscape design in spiritual contexts

Books	
Reference Books:	
1.	Kapoor, K., & Singh, A. K. (2005). Indian Knowledge Systems
2.	Lang, J. T., Desai, M., & Desai, M. (1997). Architecture and independence: The Search for Identity--India 1880 to 1980. Oxford University Press, USA
3.	Shankar .p ,Himalayan Cities: Settlement Patterns, Public Places and Architecture
4.	Batley Claude ,Design Development of Indian Architecture, Gyan Publishing House
5.	Thakkar Jay, Skye Morrison Sheila ,Mātrā: Ways of Measuring Vernacular Built Forms of Himachal Pradesh Volume 2 of Space making craft,SID Research Cell, School of Interior Design, CEPT University
6.	Ananth Sashikala,Vaastu: A Path to Harmonious Living,Lustre Press Pvt Ltd
Journal references:	
1.	Documentation of cultural heritage;techniques,potentials,and constraint,August2015, DOI:10.5194/isprsarchives-XL-5-W7-207-2015,Fereshteh Kovacs
2.	Documentation of historic structures for the assessment of heritage characteristics,June 2011,Journal of Architectural and Planning Research28(2):129-151,Mine Turan,Ipek Akbaylar Hayreter
3.	Heritage At Risk Patrimoine EnPérilP atrimonio EnPeligro ,Edited By Christoph Machat And John Ziesemer, Published by hendrik Bäßlerverlag·berlin

Course delivery methods		Assessment methods	
1.	Chalk and Talk	1.	Progressive Portfolio/Assessment Report
2.	PPT and Videos	2.	Course Activity
3.	Book Reading		

NOTE: Study culminates in the form of a report.

Course Outcome (COs) At the end of the course, the student will be able to ,			
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create		Learning Level	PO(s)
1.	**Explain** Indian traditional knowledge systems principles, spatial design, sustainability.	Un	1 ,7
2.	**Illustrate** Vastu shastra Shilpa shastra , sacred spaces and vernacular techniques.	Un, An	1 ,2,7
3.	**Analyze** temple planning, sacred spaces, climate-responsive architecture using case studies.	Un, An	1, 2,7

Scheme of Continuous Internal Evaluation (CIE):			
Components	Report/Portfolio Marking	Course Activity	Total Marks
Marks	80	20	100
Minimum score to be eligible for passing in the subject: 50 OUT OF 100			

*Note:

- Course Activity will be evaluated as the outcome (sketches/model/Report/Monograph) of site visits/ Workshops/ Hands-on / Analytical understanding/ Theoretical Studies/ Documentation/Study tours/Design Process/Design walk.
- The content and mode of conduct of the Course Activity is the prerogative of the course faculty to suitably attain the COs and POs.

Scheme of Semester End Examination(SEE):
● Note: This subject does not have Semester End Examination (SEE). ● Minimum marks required to pass CIE: 50 out of 100

CO-PO Mapping (Planned)												
CO	**PO1**	**PO2**	**PO3**	**PO 4**	**PO 5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**
1	√						√					
2	√	√					√					
3	√	√					√					

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CAMPUS DESIGN

Course Code	23DES 6.1	Course type	PC	Total credits	8
Hours/week: L-S-P	1 – 7 – 0			CIE Marks	100
Total Contact Hours	L = 14 Hrs; S = 98 Hrs; P = 0 Hrs Total = 112 Hrs			SEE Marks	100

Course learning objectives	
1.	To understand Campus and introduce principles of campus design.
2.	To understand various types of Institutional Campuses and elements involved in Planning and Designing of Campuses.
3.	To understand the role of scales, functions, character of built form in creating formal and informal spaces of learning and of built environment in nurturing campus activities.
4	To enable students to develop design solutions demonstrating the principles of campus design.

Unit–I: Principles of Campus Planning Design	Contact Hours = 08 Hours
Studying, documenting and analyzing elements involved in campus design like zoning, networking, orientation, spatial organizations of built and unbuilt spaces, building scale, character, landscape elements, nature of formal and informal learning spaces and activity patterns through case studies. To focus on campus design, incorporating the principles of renowned architects such as B.V. Doshi, Charles Correa, Raj Rewal, Anant Raje, Achyut Kanvinde, Christopher Charles Benninger, and Louis Kahn, emphasizing contextual relevance, human-centered spaces, climatic responsiveness, and innovative spatial organization.	

Unit–II -Design Project	Contact Hours = 104 Hours

Design of Institutional projects shall demonstrate understanding of principles of campus planning and role of built environment in facilitating learning activities. The design shall respect climate, environment and ecological factors of the 'Context'. The campus design will be attempted as a two-stage project, with Site/Master planning as the first stage followed by detailed Architectural design proposal of identified buildings. Projects such as campus of learning for specialized/ higher education, vocational training campus in urban/ rural context may be attempted.
e.g.: Engineering College, Medical College, Management Institute, Research Centers, Institutions of Art and Architecture and similar scale projects.

Design Methodology	

The design process comprises various stages like understanding - learning through various case studies, campus design should focus on a comprehensive process that includes understanding the site context, applying campus design principles, analyzing various types of institutional campuses, and considering scale, function, and built form to create engaging learning environments, ultimately enabling students to develop thoughtful and responsive design solutions.

Books

	Reference Books:
1.	Kanvinde Achyut, Miller. James H, Campus Design in India: Experience of a Developing Nation Jostens/American Yearbook Company, USA. 1969 and onwards.
2.	Little field David, Metric Handbook – Planning and Design Data, Architectural Pressmark. 2011 and onwards.
3.	Lynch Kevin and Hack Gary, Site Planning, Third Edition, The MIT Press, Cambridge.
4.	Schmertz Milred F, Campus Planning and Design - An Architectural Record Book, McGraw - Hill, New York, US, 1972 and onwards.

	Course delivery methods		Assessment methods
1.	PPT and Videos	1.	Progressive Portfolio Assessment
2.	Case Study	2.	Reviews
3.	Site Study	3.	Course Activity Assessment
4.	Design Discussions	4.	Semester End Examination
5.	Models		

Course Outcome (COs) At the end of the course, the student will be able to,			
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An- Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**
1	**Understand** and **analyze** the fundamental principles of campus design.	**Un, An**	1,2
2.	**State** and **Apply** the knowledge of various types of institutional campuses by exploring their elements, scales, functions, and built forms to create meaningful formal and informal learning environments that support campus life.	**Un, Ap**	1,2
3	D**evelop** design solutions **Demonstrating** the principles of campus design.	**Ap, Cr**	1,2,3,4

Scheme of Continuous Internal Evaluation (CIE):				
Components	Portfolio Marking	Reviews	*Course Activity	Total Marks
Marks	40	40	20	100
Minimum score to be eligible for SEE: 50 OUT OF 100				

*Note:

- Course Activity will be evaluated as the outcome (sketches/model/Report/Monograph) of site visits/ Workshops/ Hands-on / Analytical understanding/ Theoretical Studies/ Documentation/Study tours/Design Process/Design Walk.
- The content and mode of conduct of the Course Activity is the prerogative of the course faculty to suitably attain the COs and POs.

Scheme of Semester End Examination (SEE):
a) Viva Voce Examination will be conducted for 100 marks. b) **Minimum marks required in SEE to pass:** Score should be ≥ 40%, however overall score of CIE+SEE should be ≥50%.

CO-PO Mapping (Planned)												
CO	**PO1**	**PO2**	**PO3**	**PO 4**	**PO 5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**
1	√	√										
2	√	√										
3	√	√	√	√								

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THEORY OF ARCHITECTURE - II

Course Code	23DES 6.2	Course type	PC	Total credits	3
Hours/week: L - S- P	3 – 0 – 0			CIE Marks	100
Total Contact Hours	L = 42 Hrs; S = 0 Hrs; P = 0 Hrs Total = 42 Hrs			SEE Marks	100

Course learning objectives	
1.	To provide an insight into the ideas of influential theorists in shaping the course of Western Architecture from antiquity to the present time.
2.	To understand and analyze characteristics of architectural styles.

Unit–I : Introduction to Theory in Antiquity.	Contact Hours = 09 Hours
a) Introduction to Theory in Antiquity: Marcus Vitruvius and his multi-volume work entitled De-Architectura. b) Introduction to Theory in Renaissance: Leon Alberti and Andrea Palladio. c) Jacques François Blondel and Claude Perrault of French Academic Tradition. d) 18th Century Theory: Ideas of Laugier, Boullee and Claude Nicolas Ledoux.	

Unit–II : 19th Century Theories and Modern Movement	Contact Hours = 12 Hours
a) 19th Century Theory: Concepts of Viollet Le Duc, John Ruskin and William Morris. b) Early modernist Ideas of Adolf Loos, Erich Mendelsohn, Louis O'Sullivan. c) Modernist ideas of Walter Gropius, Le-corbusier and Mies Van der Rohe. d) Modernist ideas of I.M Pei and Kenzo Tange.	

Unit – III: Post Modern Theory and Deconstructivism.	Contact Hours = 07 Hours
a) Ideas on Post-Modern Classicism by Robert Venturi and Charles Jencks. b) Contribution to architectural ideas by Christopher Alexander and Kenneth Frampton. c) Deconstruction: Fundamental beliefs, philosophy and ideas of Peter Eisenman and Rem Koolhaas.	

Unit – IV : Parallel Theories	Contact Hours = 07 Hours
1. Ideas of Hassan Fathy and Aldo Rossi. 2. Contribution to Architectural Thought: Ideas of Amos Rapoport, Geoffrey Broadbent - design generation theories. 3. Ideas of Tadao Ando and Peter Zumthor.	

Unit – V: Architectural Criticism	Contact Hours =07 Hours
a) Architectural Criticism: Definition and Sources, its role and function in Architecture and the relationship between criticism and judgment in terms of thinking, discussing and writing on architecture, social and aesthetic issues. b) Architectural Criticism types: Definition and sources according to Wayne Attoe.	

Books	
	Reference Books:
1.	Vitruvius, Morgan M. H., Ten Books on Architecture, Dover Publications Inc. New York, US. 1960 and onwards.
2.	Ruskin John, Seven Lamps of Architecture, Dover Publications Inc. New York, US. 1989 and onwards.
3.	Curtis William, Modern Architecture Since 1900, Phaidon Press, London, UK. 1996 and onwards**.**
4.	Trachtenberg M, Hyman I., Architecture from Prehistory to Postmodernism, Pearson edition, London, England, 2002 and onwards.
5.	Wayne A., Architecture and Critical Imagination, John Wiley & Sons Inc, New York, US. 1978 and onwards.
6.	Venturi Robert, Complexity and Contradiction in Architecture, Museum of Modern Art, New York, US. 1977 and onwards.
7.	Bertoni Franco, Minimalist Architecture, Birkhauser Architecture, New York,U.S 2002.

Course delivery methods		Assessment methods	
1.	Chalk and Talk	1.	Internal Assessment Test
2.	PPT and Videos	2.	Course Activity Assessment
3.	Documentary Videos	3.	Semester End Examination

Course Outcome (COs) At the end of the course, the student will be able to			
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An- Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**
1.	**Explain** the ideas and works of various Architects and theorists from Antiquity to present times.	**Un**	1
2.	**Analyze** the characteristics of various architectural styles like Renaissance,French Academicism, Modernism, Post-Modernism, Deconstructivism, through theories and works.	**An**	1,4
3.	**Apply** understanding of theories in differentiating works of influential Architects.	**Ap**	1,4

Scheme of Continuous Internal Evaluation (CIE):			
Components	Addition of two IA tests	*Course Activity	Total Marks
Marks	40+40 = 80	20	100
Minimum score to be eligible for SEE: 50 OUT OF 100			

*Note:

- Course Activity will be evaluated as the outcome (sketches/model/Report/Monograph) of site visits/ Workshops/ Hands-on / Analytical understanding/ Theoretical Studies/ Documentation/Study tours/Design Process/Design walk.
- The content and mode of conduct of the Course Activity is the prerogative of the course faculty to suitably attain the COs and POs.

Scheme of Semester End Examination (SEE):	
1.	It will be conducted for 100 marks of 3 hours duration.
2.	**Minimum marks required in SEE to pass: Score should be ≥40% however overall score of CIE + SEE should be ≥50%**
3.	Question paper contains three parts **A, B and C**. Students have to answer 1) From Part A answer any 5 questions each Question carries 6 Marks. 2) From Part B answer any one full question from each unit and each Question carries 10 Marks. 3) From Part C answer any one full question and each Question carries 20 Marks.

CO-PO Mapping (Planned)												
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**
1	√											
2	√			√								
3	√			√								

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LANDSCAPE ARCHITECTURE

Course Code	23DES 6.3	Course type	PC	Total credits	4
Hours/week: L - S- P	2 – 2 – 0			CIE Marks	100
Total Contact Hours	L = 28 Hrs; S = 28 Hrs; P = 0 Hrs Total = 56 Hrs			SEE Marks	100

Course learning objectives	
1.	To introduce the students to the discipline of Landscape Architecture
2.	To develop basic knowledge required in handling Landscape projects.
3.	To develop design skills for landscape projects.

Unit–I : Introduction	Contact Hours = 09 Hours

a) Introduction to Landscape Architecture, Definitions and Basic terms, Natural and Man-modified landscapes
b) Hardscape and Softscape, Materials in Hardscape and Softscape.
c) Trees, Shrubs, Grasses, Groundcovers - Definition, Growth conditions, Characteristics, Landscape values, Environmental values and Aesthetic values.

Self Learning Topics: Study of application of tree - based on environmental, aesthetic or any other Landscape value

Unit–II : Site Analysis and Site Planning	Contact Hours = 09 Hours

a) How Site affects design –Organization of the garden related to the characteristics of the site, its topography and soils, orientation and views, existing features and trees affecting property and climatic conditions.
b) Site Analysis- Regional influences on site, topographic survey, base map, overlays of slopes and drainage, geological conditions and soils, hydrology and water resources, vegetation, structures, circulation, utilities, climate, visual analysis, impact assessment, preservation and conservation, Site analysis map.
c) Site planning -Site structure diagram, schematic plan and site plan (Conceptual) and Site structure expression.

Self-Learning Topics- Analysis of a site leading to schematic plan preparation based on natural, cultural, visual or historic factors

Unit – III: Elements of Landscape and their application in landscape design	**Contact Hours = 08 Hours**

Primary landscape Elements: Landforms, Water and Vegetation, design considerations and their role in articulating outdoor spatial design**.** Plant Material study and Planting Design, Planting plan, Plant Documentation and its relevance in Landscape.

Historic Gardens Of Babylon (hanging gardens), Egypt and Persia , Spain (Allahambra), Greece and Rome , Medieval Europe- Italy (villa medici by Michelozzo, Villa De Este), France (Andre de notre and Vaux le vicomte), Formal garden of England(colonial gardens and gardens of William Kent),Japanese Gardens(Karensansui, Tsukiyama and Zen, Mughal Gardens and Indian Garden

Unit – IV : Design Philosophies of noted landscape Architects.	**Contact Hours = 08 Hours**

Study of Design philosophies of Contemporary Indian Landscape Architects through their projects such as Ar. Ravindra Bhan, Prof. Mohammed Shaheer, Prof. Prabhakar Bhagwat. Study of Design philosophies of noted Landscape Architects like Geoffrey Jellicoe, Thomas Church, Luis Barragan, Dani Karavan and Martha Schwartz, Mayalin, Peter walker and partner through their noted works.

Unit – V: Landscape Design Project	**Contact Hours =22 Hours**

c) Study of existing Landscape typologies like Courtyards (residential and public), Apartment Landscapes, terrace gardens, Public Gardens and Urban spaces.
d) Streets and street furniture.
e) Demonstration of an understanding of landscape design through simple and small design exercises as a studio project. Clarity in design process, detail development and representation of landscape design scheme is emphasized

Books	
	Reference Books:
1.	Simond J.O, Landscape Architecture, McGraw-Hill Education, Delhi,983 and onwards.
2.	Laurie Michael, Introduction to Landscape Architecture, Elsevier, Netherland 1975 and onwards
3.	Jellicoe Geoffrey, The landscape of Man, Thames and Hudson, London, 2006 and onwards
4.	Mcharg Ian, Design with Nature, John Wiley and Sons, New Jersey, 1992 and onwards
5.	KrishenPradip, Trees of Delhi, Penguin, New Delhi,2006 and onwards.
6.	Church Thomas D., Gardens are for people,third edition , University of California press.,London.1995
7.	Shaheer Mohammad, Dua GeetaWahi and Pal Aditi, Landscape Architecture in India A reader,LA,Journal of landscape Architecture India 2013
8.	Jain Minakshi &Singh.I.P, Landscape architecture History, Ecology and patterns,Copal publishing Group,2017.
9.	Bell Simmonds.,Patterns, Perception and Processes, E & FN Spon,London,1999

Course delivery methods		Assessment methods	
1.	Chalk and Talk	1.	Internal Assessment Test
2.	PPT and Videos	2.	Course Activity Assessment
3.	Documentary Videos	3.	Semester End Examination

Course Outcome (COs) At the end of the course, the student will be able to			
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An-Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**
1.	**Demonstrate** the principles and concepts of landscape architecture, including form, function, and aesthetics and site analysis techniques to assess environmental, cultural, and social factors that influence the design of landscapes.	**Un,Ap**	1,2, 3
2.	**Develop** skills in planting design, selecting appropriate plant species based on climate, soil, and environmental conditions.	**An**	4,6,7
3.	**Design** landscape architecture projects that meet the needs of the stakeholders, considering aesthetic, functional, and environmental aspects.	**An,Cr**	6,9, 12

Scheme of Continuous Internal Evaluation (CIE):			
Components	Addition of two IA tests	*Course Activity	Total Marks
Marks	40+40 = 80	20	100
Minimum score to be eligible for SEE: 50 OUT OF 100			

*Note:

- Course Activity will be evaluated as the outcome (sketches/model/Report/Monograph) of site visits/ Workshops/ Hands-on / Analytical understanding/ Theoretical Studies/ Documentation/Study tours/Design Process/Design walk.
- The content and mode of conduct of the Course Activity is the prerogative of the course faculty to suitably attain the COs and POs.

Scheme of Semester End Examination (SEE):	
1.	It will be conducted for 100 marks of 3 hours duration.
2.	**Minimum marks required in SEE to pass: Score should be ≥40% however overall score of CIE + SEE should be ≥50%**
3.	Question paper contains three parts **A, B and C**. Students have to answer 4. From Part A answer any 5 questions each Question carries 6 Marks. 5. From Part B answer any one full question from each unit and each Question carries 10 Marks. 6. From Part C answer any one full question and each Question carries 20 Marks.

CO-PO Mapping (Planned)												
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**
1	√	√	√									
2				√		√	√					
3						√			√			√

Name & Signature of Faculty members involved in designing the syllabus

Name & Signature of Faculty verifying/approving the syllabus

BUILDING CONSTRUCTION AND MATERIALS – VI

Course Code	23TEC 6.1	Course type	BS & AE	Total credits	5
Hours/week: L - S- P	1 – 4 – 0			CIE Marks	100
Total Contact Hours	L = 14 Hrs; S = 56 Hrs; P = 00 Hrs Total = 70 Hrs			SEE Marks	100

Course learning objectives	
1.	To understand and design construction details of interior furniture for Residential and Office spaces.
2.	To understand and apply materials for interior finishes.

Unit–I : Residential Interiors.	Contact Hours = 14 Hours
a) Details of a typical Wardrobe in plywood. b) Details of the Queen size bed with side tables and headboard in plywood. c) Showcases, book shelves and cabinets in plywood and glass. d) Modular kitchen with overhead cabinets.	
Self-Learning Topics - Study of hardware, fasteners and fittings required for the above mentioned furniture.	

Unit–II : Office Interiors.	Contact Hours = 14 Hours
a) Introduction to table design, types of tables, function and usage. Detail of any one table- Reception table/Conference table/Workstation module/Executive table. b) Detailing of File cabinets and Storage systems.	
Self-Learning Topics - Case study and presentation of Interior details of one small commercial establishment, e.g. Salon, Retail store or Cafe.	

Unit – III: Interior Partition Systems.	Contact Hours = 14 Hours
a) Partition systems in Glass and Aluminum with openings. b) Partition systems in Plywood and Drywall with openings. c) Wall Paneling in Wood/Plywood/Glass/PVC/Cement fiber boards.	

Unit – IV: False Ceiling Systems.	Contact Hours = 14 Hours
a) Introduction to different types of False Ceiling. b) False ceiling in Plywood, Glass, Wood and Wood products. c) False ceiling - Grid ceiling and continuous ceiling with Integrated Illumination system using Cement Fiber boards, Gypsum boards, PVC and Plaster of Paris.	

Unit – V: Thermal Insulation and Interior finishes.	Contact Hours = 14 Hours
a) Thermal insulation materials and methods for walls and roof. b) Recycled Wood products, Charcoal boards, PVC sheets, Duco finish, WPC and Corian finish. c) Wallpapers, Fabrics, Artificial stones, Corten steel and High Pressure Laminate. d) Plaster of Paris and Gypsum.	
Self-Learning Topics: To collect samples, rates and manufacturer's information of the above mentioned materials.	

Books	
	Reference Books:
1.	Mackey W.B, Building Construction, Volume 3(January 2013), Orient Longman, London.
2.	Mackey W.B, Building Construction, Volume 4(January 2013), Orient Longman, London.
3.	Chudley.R, Construction Technology, Volume 3(January 2014), ELBS, England.
4.	Barry.R, Construction of Buildings, Volume 2(January 1999), EWP, New Delhi.

Course delivery methods		Assessment methods	
1.	Lectures	1.	Reviews
2.	Documentary Videos	2.	Semester End Examination
3.	Site Visits		
4.	Products demonstration by industry experts		

Course Outcome (COs) At the end of the course, the student will be able to			
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An- Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**
1.	**Explain** specifications and standards of Residential and Office furniture.	**Un**	1
2.	**Illustrate** construction design and details through drawings for Residential and Office furniture.	**Un,Cr**	1,3
3.	**Apply** materials for interior finishes**.**	**Ap**	1,3

Scheme of Continuous Internal Evaluation (CIE):			
Components	Addition of 2 reviews (including materials)	*Course Activity	Total Marks
Marks	40+40 = 80	20	100
Minimum score to be eligible for SEE: 50 OUT OF 100			

*Note:

- Course Activity will be evaluated as the outcome (sketches/model/Report/Monograph) of site visits/ Workshops/ Hands-on / Analytical understanding/ Theoretical Studies/ Documentation/Study tours/Design Process/Design walk.
- The content and mode of conduct of the Course Activity is the prerogative of the course faculty to suitably attain the COs and POs.

Scheme of Semester End Examination (SEE):	
1.	Viva-Voce will be conducted for 100 marks.
2.	**Minimum marks required in SEE to pass: Score should be ≥ 40%, however overall score of CIE+SEE should be ≥50%**

CO-PO Mapping (Planned)												
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**
1	√											
2	√		√									
3	√		√									

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PHYSICAL PLANNING

Course Code	23HUM6.1	Course type	PC	Total credits	3
Hours/week: L-S-P	3–0-0			CIE Marks	100
Total Contact Hours	L=42 Hrs; S=0 Hrs; P=00 Hrs Total= 42 Hrs			SEE Marks	100

Course learning objectives	
1.	To familiarize students with the planning principles demonstrated through various civilizations.
2.	To introduce various planning concepts and theories, discuss urbanization and its impact on city planning.
3.	To introduce various processes and techniques used in planning the cities.

Unit–I : History of Human Settlements	Contact Hours = 10 Hours

a) An Introduction to Human Settlements and understanding the historical development of a city as a product of socio-cultural, economic and political ideologies.
b) History of City Planning: Principles of settlement planning in various historical periods like Mesopotamia, Egypt, Greek, Roman, Medieval, Renaissance and Neoclassical.
c) Cities of Vedic period, Indus valley, Temple towns, Cities of Mughal period and British-Colonial period.
d) City Beautiful movement

Unit–II : Planning Theories and Models	Contact Hours = 09 Hours

a) Urban settlements and rural settlements: Origins, evolution and growth of settlements, characteristics, relation and differences.
b) Theories enunciated by Ebenezer Howard, Soria Y. Mata, Clarence Arthur Perry, Clarence Stein Patrick Geddes, C.A. Doxiades, Le-Corbusier, Ian Mcharg and Jane Jacobs.
c) City Planning Model: Concentric zone model, Sector theory model and Multiple nuclei model.

Unit–III: Urbanization and Components of a City	Contact Hours = 08 Hours

a) Industrialization, Urbanization and its impact on city planning; Classification of Cities - based on form, function and population.
b) Components of a City: Land use and activity pattern, traffic and road networks, density of population and population distribution, Central Business District, residential neighborhoods, urban nodes, fringe areas and suburbs.
c) Emergence of new forms of developments: Self Sustained Communities, Special Economic Zones (SEZ), Transit Oriented Development (TOD) and Integrated townships.
Introduction to the concept of Livable cities, Sustainable cities and Smart cities.

Self-Learning Topics -URDPFI Guidelines, 2016, Ministry of Housing and Urban Development.

Unit – IV : Process and Techniques of City Planning	Contact Hours = 08 Hours

a) Introduction to Planning Process: City planning, Role of planners, aims and objectives of city planning.
b) Planning Techniques: Study and analysis of existing settlements - Introduction to the methodology of conducting diagnostic surveys, land use survey, density survey, FSI survey, traffic surveys and presentation of data.
c) Introduction to the concept of Development plan, Master plan, Structure plan and Perspective plan.
d) Land use planning and zoning.

Unit – V: Concept of Regional Planning and Urban Renewal	Contact Hours =07 Hours

a) Regional Planning: Definition of a Region, basic principles of regional planning, various types of regions.
b) Slums: Causes and Effects, prevention of formation of slums and squatter settlements.
c) Urban Renewal: Definition of Urban Renewal, Redevelopment, Rehabilitation and Conservation.

Books	
	Reference Books:
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., New 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.	Gordon Cullen Thomas; The Concise Townscape, Architectural Press Routledge,1961 and onwards.
6.	Hough Michael; Cities and Natural process: A Basis for Sustainability, Routledge,1995 and onwards
7.	Katz Peter; The New Urbanism: Toward an Architecture of Community, Mcgraw Hill Professional, 1993 and onwards.
8.	Evans B. Peter; Livable Cities? - Urban Struggles for Livelihood and Sustainability, University of California Press, 2002.

Course delivery methods		Assessment methods	
1.	Chalk and Talk	1.	Internal Assessment Test
2.	PPT	2.	Course Activity Assessment
3.	Documentary Videos	3.	Semester End Examination

Course Outcome (COs) At the end of the course, the student will be able to ,			
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An- Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**
1.	**Explain** the planning principles demonstrated through various civilizations.	**Un**	1,2
2.	**Explain** the ideas and works of various Planners.	**Un**	1,2
3.	**Illustrate** the design concepts, process and techniques, planning principles and models of planners.	**Un**	1,2,7

Scheme of Continuous Internal Evaluation (CIE):			
Components	Addition of two IA tests	*Course Activity	Total Marks
Marks	40+40 = 80	20	100
Minimum score to be eligible for SEE: 50 OUT OF 100			

*Note:

- Course Activity will be evaluated as the outcome (sketches/model/Report/Monograph) of site visits/ Workshops/ Hands-on / Analytical understanding/ Theoretical Studies/ Documentation/Study tours/Design Process/Design walk.
- The content and mode of conduct of the Course Activity is the prerogative of the course faculty to suitably attain the COs and POs.

Scheme of Semester End Examination (SEE):	
1.	It will be conducted for 100 marks of 3 hours duration.
2.	**Minimum marks required in SEE to pass: Score should be ≥40% however overall score of CIE + SEE should be ≥50%**
3.	Question paper contains three parts **A, B and C**. Students have to answer From Part A answer any 5 questions each Question carries 6 Marks. From Part B answer any one full question from each unit and each Question carries 10 Marks. From Part C answer any one full question and each Question carries 20 Marks.

CO-PO Mapping (Planned)												
CO	**PO1**	**PO2**	**PO3**	**PO 4**	**PO 5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**
1	√	√										
2	√	√										
3	√	√					√					

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CONTEMPORARY ARCHITECTURE

Course Code	23HUM6.2	Course type	PC	Total credits	3
Hours/week: L - S- P	3 – 0 – 0			CIE Marks	100
Total Contact Hours	L = 42 Hrs; S = 0 Hrs; P = 0 Hrs Total = 42 Hrs			SEE Marks	100

Course learning objectives	
1.	To provide an insight of Contemporary trends in Indian Architecture in terms of ideas and directions.
2.	To provide an insight of Contemporary trends in Western Architecture in terms of ideas and directions.
3.	To understand and study design approaches of the Master Architects through their works.

Unit–I : Masters of Post-Independence Architecture in India –I	Contact Hours = 09 Hours
a) Ideas and Works of Le Corbusier - Legislative Assembly Complex including High Court, Legislative Assembly and Secretariat, Chandigar; Louis Kahn - IIM, Ahmedabad. b) Ideas and Works of B.V. Doshi - CEPT, Ahmedabad; IIM, Bangalore; Charles Correa - Gandhi Smarak, Ahmedabad; Bharat Bhavan, Bhopal.	
Self-Learning Topics-Mill Owners Association, Ahmedabad; Sangath, Ahmedabad; Kala Academy, Goa.	

Unit–II : Masters of Post-Independence Architecture in India –II	Contact Hours = 09 Hours
Ideas and Works of Raj Rewal - Pragati Maidan, New Delhi; Asiad Games Village, New Delhi; Achyut Kanvinde - IIT, Kanpur; Nehru Science Centre, Mumbai; Anant Raje - IIFM, Bhopal; Management Development Centre, IIM-Ahmedabad; Hasmukh Patel - Newman Hall, Ahmedabad; Laurie Baker - Centre for Development Studies, Thiruvananthapuram; St. John Cathedral at Thiruvalla.	

Unit – III: Contemporary Western Architects - I	Contact Hours = 08 Hours
Ideas and Works of Louis Kahn - Salk Institute, California; Richard Mier - Jubilee Church, Rome; Sir Norman Foster - Hong Kong Shanghai Bank, Hong Kong; Renzo Piano - Pompidou Centre, Paris; Santiago Calatrava - Olympic Stadium, Athens.	
Self-Learning Topics- Kimbell Art Museum, Texas; National Assembly Building, Dhaka; Smith House, Connecticut; Menil Museum, Houston; Renault Distribution Centre, Swindon; Lyon-Satolas Railway Station, Lyon.	

Unit – IV : Contemporary Western Architects - II	Contact Hours = 08 Hours
Ideas and Works of Bernard Tschumi - Parc de la Villette, Paris; Frank O. Gehry - Guggenheim Museum, Bilbao; Zaha Hadid - Vitra Fire Station, Weil-am-Rhein; Daniel Lebiskind - Jewish Museum, Berlin; Rem Koolhaas - Seattle Public Library, Seattle.	

Unit – V: Regionalism, Tropical Modernism and Minimalism	Contact Hours =08 Hours
a) Geoffrey Bawa - Heritance Kandalama, Dambulla; Ricardo Legorreta - Pershing Square, Downtown, Los Angeles; Alvaro Siza - Public Library, Viana do Castelo. b) Works of Tadao Ando - Church of the light, Osaka; Naoshima Contemporary Art Museum, Naoshima; Peter Zumthor - Bruder Klaus Field Chapel, Germany.	
Self-Learning Topics- Luis Barragan - La Cuadra San Cristóbal, Mexico; Glenn Murcut - Arthur and Yvonne Boyd Education Centre, New South Wales; Peter Rich - Mapungubwe Interpretation Centre, South Africa; Diébédo Francis Kéré - Gando Primary School, Burkina Faso.	

Books	
	Reference Books:
1.	Morgon, Ann Lee & Taylor Colin: Contemporary Architecture, St James Press, London, Edition 1987 and Onwards.
2.	Bahga, Bahga and Bahga: Modern Architecture in India, Galgotia Pub. Co, New Delhi 1993 and Onwards.
3.	Frampton Kenneth; Charles Correa works, Thames and Hudson, 1996.
4.	Curtis William; Modern Architecture since 1900, Phaidon, London Edition 1996 and Onwards.
5.	Jodidio Philip; Hadid, Complete works 1979-2013, Taschen, Berlin Edition 2009 and Onwards.
6.	Jodidio Philip; Ando Complete Works, Taschen, London Edition 2007 and Onwards.

Course delivery methods		Assessment methods	
1.	Chalk and Talk	1.	Internal Assessment Test
2.	PPT	2.	Course Activity Assessment
3.	Documentary Videos	3.	Semester End Examination

Course Outcome (COs) At the end of the course, the student will be able to			
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An- Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**
1.	**Explain** the ideas and works of various Contemporary Architects.	**Un**	1,2,4
2.	**Illustrate** the design concepts, planning principles, construction and material details incorporated in the works of Master Architects.	**Un,An**	1,2,4
3.	**Analyze** and **illustrate** the characteristics of High - Tech Architecture, Deconstructivism, Regionalism, Tropical modernism and Minimalism through the works of Master Architects.	**An**	1,2,4

Scheme of Continuous Internal Evaluation (CIE):			
Components	Addition of two IA tests	*Course Activity	Total Marks
Marks	40+40 = 80	20	100
Minimum score to be eligible for SEE: 50 OUT OF 100			

*Note:

- Course Activity will be evaluated as the outcome (sketches/model/Report/Monograph) of site visits/ Workshops/ Hands-on / Analytical understanding/ Theoretical Studies/ Documentation/Study tours/Design Process/Design walk.
- The content and mode of conduct of the Course Activity is the prerogative of the course faculty to suitably attain the COs and POs.

Scheme of Semester End Examination (SEE):	
1.	It will be conducted for 100 marks of 3 hours duration.
2.	**Minimum marks required in SEE to pass: Score should be ≥40% however overall score of CIE + SEE should be ≥50%**
3.	Question paper contains three parts **A, B and C**. Students have to answer From Part A answer any 5 questions each Question carries 6 Marks. From Part B answer any one full question from each unit and each Question carries 10 Marks. From Part C answer any one full question and each Question carries 20 Marks.

CO-PO Mapping (Planned)												
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**
1	√	√		√								
2	√	√		√								
3	√	√		√								

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Name & Signature of Faculty verifying/approving the syllabus

UNIVERSAL HUMAN VALUES AND PROFESSIONAL ETHICS

Course Code	23HUM6.3	Course type	UHV	Total credits	1
Hours/week: L-S-P	1– 0 – 0			CIE Marks	50
Total Contact Hours	L = 14 Hrs; S = 00 Hrs; P = 00 Hrs Total = 14 Hrs			SEE Marks	50

Course learning objectives	
1.	To provide understanding of basic human values.
2.	To communicate the need of education for quality life.

Pre-requisites : English Language, Social Studies.

Unit – I: Human Values	Contact Hours = 07 Hours
Objectives, Morals , Values, Ethics, Integrity, Work ethics, Service learning, Virtues, Respect for others, Living peacefully, Caring, Sharing, Honesty, Courage ,Valuing time, Cooperation, Commitment, Empathy, Self-confidence, Challenges in the work place, Spirituality, Yoga for Professional Excellence and Stress Management..	

Unit – II: Value Education	Contact Hours = 07 Hours
Introduction, Understanding Value Education, Basic Guidelines for Value Education, The content of Value Education, Education for Fulfilling Life, Skill Education, Priority of Values over Skills. The Process of Value Education.	

Activities include - Illustrative case studies and Surveys related to Human values.

Books:	
1.	Nagarazan R.S.; Professional Ethics and Human Values, New Age International Publishers Pvt.Ltd. 2006.
2.	P.R.Gaur, R.Sangal, G.P.Bagaria; A Foundation Course in Human Values and Professional ethics.

Course delivery methods		Assessment methods	
1.	Lectures	1.	IA Test
2.	Presentation	2.	Activity
3.	Expert Talks	3.	Semester End Examination

Course Outcome (COs) At the end of the course, the student will be able to			
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create		**Learning Level**	**PO(s)**
1.	Identify and understand the human values	**Un**	8, 9, 12
2.	Understand and practice the human values, work ethics, respect others and stress management.	**Un , Ap**	8, 9, 12

Scheme of Continuous Internal Evaluation (CIE):			
Components	**Addition of two IA tests**	**Course Activity**	**Total Marks**
Marks	20+20= 40	10	50
Minimum score to be eligible for SEE: 25 OUT OF 50			

*Note:

- Course Activity will be evaluated as the outcome (sketches/model/Report/Monograph) of site visits/ Workshops/ Hands-on / Analytical understanding/ Theoretical Studies/ Documentation/Study tours/Design Process/Design walk.
- The content and mode of conduct of the Course Activity is the prerogative of the course faculty to suitably attain the Cos and Pos.

Scheme of Semester End Examination (SEE):	
1.	It will be conducted for 50 marks of 1 hour duration.
2.	The pattern of the question paper is MCQ (multiple choice questions).
3.	**Minimum marks required in SEE to pass:** Score should be ≥ 40%, however overall score of CIE+SEE should be ≥50%.

CO-PO Mapping (Planned)												
CO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO 11**	**PO 12**
1								√	√			√
2								√	√			√

Name & Signature of Faculty members involved in designing the syllabus

Name & Signature of Faculty verifying/approving the syllabus

SUSTAINABLE ARCHITECTURE

Course Code	23AOE6.11	Course type	OE	Total credits	3
Hours/week: L-S-P	3– 0 – 0			CIE Marks	100
Total Contact Hours	L = 42 Hrs; S = 00 Hrs; P = 00 Hrs Total = 42 Hrs			SEE Marks	100

Course learning objectives	
1.	To sensitize the students to the issues of sustainability.
2.	To understand the need for Sustainable Architecture through Traditional Wisdom.
3.	To understand Sustainable approaches in Contemporary built forms in Indian context.

Unit – I: **Introduction**	Contact Hours = 09 Hours
a) Sustainable Architecture: Environment and Efficiency. Different aspects of Sustainability like Water, Energy, Earth, Waste and Materials. b) Sustainable Built environment: Issues and approaches.	

Unit – II: **Sustainable Concepts**	Contact Hours = 09 Hours
a) Sustainable Concepts in Traditional Architecture in different climatic zones in Rural and Urban Context. b) Study of Sustainable built forms and Contemporary approaches through various case studies.	

Unit – III: **Design Exercise**	Contact Hours = 24 Hours
a) The students have to apply the concepts of Sustainability to an existing residential plan. The class will be divided in groups, each group studying the different literature case studies to understand the application of sustainable design concepts and then applying them in design. b) The explorations of the studio to be produced in the form of drawings at the end of semester that will demonstrate the planning strategies to achieve sustainable buildings.	

Books	
1.	**Pandya Yatin,** Sustainable Built Environment, A Panorama, Footprints, E.A.R.T.H., (Environment. Architecture. Research. Technology. Housing), Ahmedabad.
2.	**Majumdar Mili,** Energy Efficient Buildings in India, Tata Energy Research Institute (TERI) and Ministry of Non-conventional Energy Sources, Govt. of India, 1997

Course delivery methods		Assessment methods	
1.	Chalk and Talk	1.	Progressive Portfolio/Assessment Report
2.	PPT and Videos	2.	Course Activity
		3.	Semester End Examination(Viva Voce)

Course Outcome (COs) At the end of the course, the student will be able to ,			
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create		Learning Level	PO(s)
1.	**Understand** the issues of Sustainability	Un	1
2.	**Explain** the concepts of traditional and contemporary approaches towards sustainable architecture	Un	1 ,2
3.	**Apply** and **Design** sustainable techniques for a given project	Un, An	1, 2,7

Scheme of Continuous Internal Evaluation (CIE):			
Components	Report/Portfolio Marking	Course Activity	Total Marks
Marks	80	20	100
Minimum score to be eligible for passing in the subject: 40 OUT OF 100			

*Note:

- Course Activity will be evaluated as the outcome (sketches/model/Report/Monograph) of site visits/ Workshops/ Hands-on / Analytical understanding/ Theoretical Studies/ Documentation/Study tours/Design Process/Design walk.
- The content and mode of conduct of the Course Activity is the prerogative of the course faculty to suitably attain the COs and POs.

Scheme of Semester End Examination (SEE):	
1.	Viva-Voce will be conducted for 100 marks
2.	**Minimum marks required in SEE to pass: Score should be ≥35% however overall score of CIE + SEE should be ≥40%**

CO-PO Mapping (Planned)												
CO	**PO1**	**PO2**	**PO3**	**PO 4**	**PO 5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**
1	√											
2	√	√										
3	√	√					√					

Name & Signature of Faculty members members involved in designing the syllabus

Name & Signature of Faculty verifying/approving the

URBAN PLANNING

Course Code	23AOE6.12	**Course type**	OE	**Total credits**	3
Hours/week: L-S-P	3– 0 – 0			**CIE Marks**	100
Total Contact Hours	L = 42 Hrs; S = 00 Hrs; P = 00 Hrs Total = 42 Hrs			**SEE Marks**	100

Course learning objectives	
1.	To introduce the concepts of Urban Planning and familiarize students with the Planning principles demonstrated through various civilizations.
2.	To introduce the planning strategies and surveys used in planning of urban areas and preparation of the plans.

Pre-requisites: Student should be equipped with knowledge of CAD software (Ex: AutoCAD)

Unit – I: Introduction to Planning Theory	**Contact Hours = 04 Hours**
a) Definition of Urban Planning, Introduction to aims and the objectives of planning and need for the social, cultural, economic and political ideologies as basis for planning and development of urban areas. b) Understanding planning as a multi-level comprehensive process of development through local, urban, rural, regional and national planning. c) Introduction to scope and objectives of development plan, structure plans, master plan and perspective plan.	

Unit – II: History of Human Settlements	**Contact Hours = 06 Hours**
a) An Introduction to Human Settlements. Origins, evolution and growth of settlements. b) History of City Planning: Introduction to planning principles of cities of ancient civilizations. c) Study of planning of ancient Indian cities and Indus Valley Civilization.	

Unit – III: City Components and Planning Models	Contact Hours = 08 Hours
a) Land use and activity pattern, density of population, population distribution. Central Business District, neighbourhood, urban nodes, fringe areas and suburbs. b) Models of land use planning like concentric zone model, sector theory model, multiple nuclei model, neighbourhood planning and garden city concepts. c) Study and analysis of a residential layout in an urban area.	

Unit – IV: Planning Techniques and design of a layout	Contact Hours = 24Hours
a) Introduction to surveying and analytical techniques including household survey, land use surveys, density surveys, landscape survey, transportation surveys and service survey and presentation of the data. b) Performance standards, spatial standards of utilities. c) Design of a layout for a neighborhood	

Note:

- The students shall be required to present their understanding of the planning of the cities in the form of seminar/presentation.
- The students shall be required to undertake survey and analysis of a given sizeable area in an urban setting (group work) and design a layout for the same, which shall be carried out as a project (individual work).

Books	
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.	**Doxiadis. Constantinos A.,** Ekistics: An introduction to the Science of Human Settlements, Oxford University Press; 1968 and onwards.
6.	**UDPFI Guidelines - Vol I -** Urban Development Plan Formulation and Implementation Guidelines.
7.	Urban and Regional Development Plans Formulation and Implementation (URDPFI) guidelines.

Course delivery methods		Assessment methods	
1.	Chalk and Talk	1.	Progressive Portfolio/Assessment Report
2.	PPT and Videos	2.	Course Activity
		3.	Semester End Examination(Viva Voce)

Course Outcome (COs) At the end of the course, the student will be able to ,			
Learning Levels: Re - Remember; Un - Understand; Ap - Apply; An - Analysis; Ev - Evaluate; Cr - Create		Learning Level	PO(s)
1.	**Understand** planning principles of various civilizations.	Un	1
2.	**Explain** Planning Strategies for an urban area.	Un	1 ,2
3.	**Survey**, **Analyze** and design a layout for a given area.	Un, An	1, 2,7

Scheme of Continuous Internal Evaluation (CIE):			
Components	Report/Portfolio Marking	Course Activity	Total Marks
Marks	80	20	100
Minimum score to be eligible for passing in the subject: 40 OUT OF 100			

*Note:

- Course Activity will be evaluated as the outcome (sketches/model/Report/Monograph) of site visits/ Workshops/ Hands-on / Analytical understanding/ Theoretical Studies/ Documentation/Study tours/Design Process/Design walk.
- The content and mode of conduct of the Course Activity is the prerogative of the course faculty to suitably attain the COs and POs.

Scheme of Semester End Examination (SEE):	
1.	Viva-Voce will be conducted for 100 marks
2.	**Minimum marks required in SEE to pass: Score should be ≥35% however overall score of CIE + SEE should be ≥40%**

CO-PO Mapping (Planned)												
CO	**PO1**	**PO2**	**PO3**	**PO 4**	**PO 5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO 10**	**PO 11**	**PO 12**
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