Five-Year Undergraduate Programme

Bachelor of Architecture

Faculty of Architecture and Planning
Parul University
Vadodara, Gujarat, India

Faculty of Architecture and Planning
Bachelor of Architecture

1. **Vision of the Department**
   To become a Centre of Excellence that fosters Contextual Interventions for Efficient Built-environment Practices.

2. **Mission of the Department**
   To develop creative professionals who are sensitive to the environment, socially responsive and possess the highest levels of technical competence.

3. **Program Outcomes**
   Program Learning outcomes are statements conveying the intent of a program of study.

PO 1	**Technical Knowledge & Skillsets:**	Apply the knowledge of building materials, construction techniques, structure, services, graphic (manual/software based) to the solution of complex design problems.
PO 2	**Comprehend Theories & Criticism:**	Read, understand, and comprehend various theories, criticism and ideas to be able to implement the same in design solutions.
PO 3	**Problem Identification and Analysis:**	Ability to think and identify the problems and analyze the same based on various parameters to present the inferences.
PO 4	**Conduct investigations of complex problems:**	Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO 5	**Design/Development of Solutions:**	Perceive and Develop Design Solutions based on analysis and inferences.
PO 6	**Universal Visual & Verbal Communication Skills:**	Understand and adopt the universal language of design communication. Also, develop verbal communication skills for efficient communication of design ideas.
PO 7	**Environment & Sustainability:**	Develop sensitivity towards environment and learn ways to respond to the same through design.
PO 8	**Systematic Development of Design within Constraints:**	Ability to understand the regulations dictated by context, bylaws, client brief, etc. and develop the best possible design response.
PO 9	**Professional Ethics:**	Implement and commit to professional ethics and Council regulations, responsibilities, and norms of professional Architectural practice.

PO 10	**Innovation & Entrepreneurship**	Identify a timely opportunity and using innovation to pursue that opportunity to create value and wealth for the betterment of the individual and society at large.
PO 11	**Individual & Teamwork:**	Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO 12	**Learning Attitude**	Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of change in the profession.

4. Program Specific Learning Outcomes

PSO 1	To prepare Architects who will be effective professionals in identifying, analyzing and developing design solutions addressing to the needs/problems of various sections of society with their proficient technical skills.
PSO 2	To prepare socially and ethically responsible graduates who can work in a team or as an individual with proven abilities and expertise.
PSO 3	To prepare graduates with life-long learning attitude and strong communication skills in tandem with analytical and conceptual expertise.

5. Credit Framework

Semester wise Credit distribution of the programme	
Semester-1	30
Semester-2	30
Semester-3	30
Semester-4	30
Semester-5	30
Semester-6	30
Semester-7	30
Semester-8	30
Semester-9	30
Semester-10	30
Total Credits:	**300**

Category wise Credit distribution of the programme	
Category	**Credit**
Major Core	70
Minor Stream	77
Field visit	12
Ability Enhancement Course	48
Skill Enhancement Courses	27
Value added Courses	16
Summer Internship	30
Research Project/Dissertation	20
Total Credits:	**300**

6. Program Curriculum / Teaching Scheme

Semester 1						
Sr. No.	**Subject Code**	**Subject Name**	**Credit**	**Lect**	**Studio**	**Field Work**
1.	01101101	Architectural Design -I	8	2	4	2
2.	01101102	Building Materials & Construction Technology -I	5	2	2	1
3.	01101103	Architectural Graphics Skills -I	6	1	4	1
4.	01101104	Evolution of Architecture -I	3	1	1	1
5.	01101105	Architecture and Environment -I	3	2	0	1
6.	01101106	Elements of Architecture -I	3	1	1	1
7.	01101107	Related Study Programme -I	2	0	0	2
		Total	**30**	**9**	**12**	**9**
Semester 2						
Sr. No.	**Subject Code**	**Subject Name**	**Credit**	**Lect**	**Studio**	**Field Work**
8.	01101151	Architectural Design -II	8	2	4	2
9.	01101152	Building Materials & Construction Technology -II	5	2	2	1
10.	01101153	Architectural Graphics Skills -II	6	1	4	1
11.	01101154	Evolution of Architecture -II	3	1	1	1
12.	01101155	Architecture and Environment -II	3	2	0	1
13.	01101156	Elements of Architecture -II	3	1	1	1
14.	01101157	Related Study Programme -II	2	0	0	2
		Total	**30**	**9**	**12**	**9**
Semester 3						
Sr. No.	**Subject Code**	**Subject Name**	**Credit**	**Lect**	**Studio**	**Field Work**
15.	01101201	Architectural Design -III	8	2	4	2
16.	01101202	Building Materials and Construction Technology -III	5	2	2	1
17.	01101203	Architectural Graphics Skills -III	5	1	3	1
18.	01101204	Evolution of Architecture -III	4	2	1	1
19.	01101205	Architecture and Environment -III	2	2	-	-
20.	01101206	Structural Design and Analysis -I	4	2	2	-
21.	01101207	Related Study Programs -III	2	-	-	2
		Total	**30**	**11**	**12**	**7**
Semester 4						
Sr. No.	**Subject Code**	**Subject Name**	**Credit**	**Lect**	**Studio**	**Field Work**
22.	01101251	Architectural Design-IV	8	2	4	
23.	01101252	Building Materials and Construction Technology-IV	5	2	2	
24.	01101253	Architectural Graphics Skills-IV	5	1	3	
25.	01101254	Evolution of Architecture-IV	4	2	1	
26.	01101255	Architecture and Environment-IV	2	2	-	

27.	01101256	Structural Design and Analysis-II	4	2	2	
28.	01101257	Related Study Programs-IV	2	-	2	
		Total	**30**	**11**	**14**	

Semester 5

Sr. No.	Subject Code	Subject Name	Credit	Lect	Studio	Field Work
29.	01101301	Architectural Design-V	10	2	6	2
30.	01101302	Building Materials & Construction Technology-V	5	2	2	1
31.	01101303	Building Services & Equipment's-I	3	1	2	-
32.	01101304	Surveying & Levelling	2	1	-	1
33.	01101305	Landscape Architecture	3	1	2	-
34.	01101306	Structural Design & Analysis-III	5	2	2	1
35.	01101307	Related Study Programs-V	2	-	-	2
		Total	**30**	**9**	**14**	**7**

Semester 6

Sr. No.	Subject Code	Subject Name	Credit	Lect	Studio	Field Work
36.	01101351	Working Drawings	10	2	6	2
37.	01101352	Estimating, Costing & Specifications	5	2	2	1
38.	01101353	Building Services & Equipment's-II	3	1	2	-
39.	01101354	Building Regulations	2	1	-	1
40.	01101355	Architecture Portfolio & Presentation	3	1	2	-
41.	01101356	Structural Design & Analysis-IV	5	2	2	1
42.	01101357	Related Study Programs-VI	2	-	-	2
		Total	**30**	**9**	**14**	**7**

Semester 7

Sr. No.	Subject Code	Subject Name	Credit	Lect	Studio	Field Work
43.	01101401	Architectural Design-VI	12	2	8	2
44.	01101402	Advance Building Materials & Construction	4	1	2	1
45.	01101403	Advance Services	4	1	2	1
46.	01101404	Advance Structural Design & Systems	3	1	1	1
47.	01101405	Thesis Orientation-I	2	1	-	1
48.		Elective-I (Compulsory Subjects :1) -	3	-	-	-
49.		Elective-II (Compulsory Subjects :1) -	2	-	-	-
		Total	**30**	**6**	**13**	**6**

Elective-I

Sr. No.	Subject Code	Subject Name	Credit	Lect	Studio	Field Work
i.	01101430	Art and Architecture	3	-	-	-
ii.	01101431	Visual Communication	3	-	-	-
iii.	01101432	Architectural Journalism	3	-	-	-

iv.	01101433	Theatre/Film Set Design	3	-	-	-
v.	01101434	Marketing Skills	3	-	-	-
vi.	01101435	Infrastructure Planning and Management	3	-	-	-
Elective-II						
Sr. No.	**Subject Code**	**Subject Name**	**Credit**	**Lect**	**Studio**	**Field Work**
i.	01101440	Disaster Management	2	-	-	-
ii.	01101441	Expert Systems & Advanced Computing	2	-	-	-
iii.	01101442	Modular Co-ordination	2	-	-	-
iv.	01101443	Building System Integration	2	-	-	-
v.	01101444	Intelligent Buildings	2	-	-	-
vi.	01101445	Project Contract System	2	-	-	-
Semester 8						
Sr. No.	**Subject Code**	**Subject Name**	**Credit**	**Lect**	**Studio**	**Field Work**
50.	01101451	Office Training	30	-	-	-
Semester 9						
Sr. No.	**Subject Code**	**Subject Name**	**Credit**	**Lect**	**Studio**	**Field Work**
51.	01101501	Architectural Design - VII	16	2	10	4
52.	01101502	Thesis Orientation-II	6	2	3	1
53.	01101503	Research Methodology	4	2	1	1
54.		Elective-III (Compulsory Subjects :1) -	4	-	-	-
		Total	**30**	**6**	**14**	**6**
Elective-III						
Sr. No.	**Subject Code**	**Subject Name**	**Credit**	**Lect**	**Studio**	**Field Work**
i.	01101530	Landscape Design	4	-	-	-
ii.	01101531	Architectural Conservation	4	-	-	-
iii.	01101532	Construction Management	4	-	-	-
iv.	01101533	Environmental Studies	4	-	-	-
v.	01101534	Sustainable Architecture	4	-	-	-
vi.	01101535	Urban Ecology	4	-	-	-
Semester 10						
Sr. No.	**Subject Code**	**Subject Name**	**Credit**	**Lect**	**Studio**	**Field Work**
55.	01101551	Thesis (Project)	20	2	12	6
56.	01101552	Design Seminar & Publication	3	2	1	-
57.	01101553	Professional Practice	3	2	1	-
58.		Elective-IV (Compulsory Subjects :1) -	4	-	-	-
		Total	**30**	**6**	**14**	**6**
Elective-IV						

Sr. No.	Subject Code	Subject Name	Credit	Lect	Studio	Field Work
i.	01101580	Housing	4	-	-	-
ii.	01101581	Urban Design	4	-	-	-
iii.	01101582	Interior Design	4	-	-	-
iv.	01101583	Urban Planning	4	-	-	-
v.	01101584	Energy Conscious Architecture	4	-	-	-
vi.	01101585	Environmental Impact Assessment	4	-	-	-
		Total	**300**			

7. Syllabus & Course outcome of the subjects

Syllabus & Course Outcome

Semester I

a. Course Name: Architectural Design - I

b. Course Code: 01101101

c. Course Learning Outcomes:

CLO 1	Identify principles and elements of design and visual composition.
CLO 2	Employ anthropometry in perceiving and designing spaces.
CLO 3	Describe the basic shelter and its types.
CLO 4	Create small enclosure based on understanding development in other subjects.

d. Teaching & Examination Scheme:

Teaching Scheme			Credit	Evaluation Scheme					
				External		Internal			Total
L	T	P		Theory	Practical	Theory	CE	Practical	
2	2	4	8	-	-	40	-	60	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

e. Course Content:

Sr. No.	Content	Weightage	Teaching Hours
1	Principles and elements of visual composition:	25%	32
2	Exploring colour scheme and its application on architectural	10%	12
3	Study of textures	5%	6
4	Nature study	15%	19
5	Understanding of basic shelter and its types	20%	26
6	Study of anthropometry and its co -relevance with spaces:	25%	33

f. Textbook and Reference Book:

1. FORM, SPACE AND ORDER
2. Francis D.K Ching, John Wiley & Sons
3. Design Evolution: A Handbook of Basic Design Principles Applied in Contemporary Design Tim Samara; Rockport Publishers
4. Design fundamentals: Notes on Visual Elements and Principles of Composition Rose Gonnella, Christopher Navetta and Max Friedman, Peachpit Press
5. Geometry of Design: Studies in Proportion and Composition Kimberly Elam; Princeton Architectural Press

g. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3	CLO4
1	Principles and elements of visual composition	✓			
2	Exploring colour scheme and its application on architectural Elements	✓			
3	Study of textures		✓		
4	Nature study		✓		
5	Understanding of basic shelter and its types:			✓	
6	Study of anthropometry and its co -relevance with spaces:	✓			✓

a. Course Name: Building Materials & Construction Technology -I

b. Course Code: 01101102

c. Course Learning Outcomes:

CLO 1	Define Earth construction techniques for properties of construction.
CLO 2	Categories composition of bricks.
CLO 3	Employ techniques of using Bamboo in relevant constructions.
CLO 4	"Co-relate existence of one material with another by taking into consideration its properties.

d. Teaching & Examination Scheme:

Teaching Scheme			Credit	Evaluation Scheme					
				External		Internal			Total
L	T	P		Theory	Practical	Theory	CE	Practical	
2	1	2	5	50	-	50	-	-	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

e. Course Content:

Sr. No.	Content	Weightage	Teaching Hours
1	Earth construction techniques (Adobe, Cob, Rammed Earth, Pressed Brick, Wattle & Daub).	25%	20
2	Composition of good brick earth, manufacturing of bricks, classification of bricks, types of bricks, brick-bonds (English, Flemish, Double Flemish, Rat trap, Herring bone), brick arches (Flat arch, Segmental arch, Roman arch, Gothic arch, 3 Centred arch, 5 Centred arch).	30%	**24**
3	Properties of Bamboo and various techniques used for bamboo construction.	25%	**20**
4	Classification and types of stone, types of stone masonry, structural and non-structural usage of stone.	20%	**16**

f. Text Book and Reference Book:

1. Construction of Buildings R. Barry, Wiley - Blackwell
2. Building construction W.B McKay, Pearson
3. Building construction Handbook Roy Chudley and Roger Greeno
4. Architecture and Design: Bamboo Construction & Design: Design Guide & 59 Case Study Eduard Broto; Leading International Key Services Barcelon
5. Bamboo in construction: An introduction D.L Jayanetti and P.R Follett; International Network for Bamboo and Rattan (INBAR) Technical Report15
6. Designing and building with bamboo J.J.A Janssen; International Network for Bamboo and Rattan (INBAR) Technical Report20
7. Earth Architecture Ronald Rael; Princeton Architectural Press
8. Building Construction Illustrated Francis D.K Ching, Wiley

g. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3	CLO4

1	Earth construction techniques (Adobe, Cob, Rammed Earth, Pressed Brick, Wattle & Daub).	✓			
2	Composition of good brick earth, manufacturing of bricks, classification of bricks, types of bricks, brick-bonds		✓		
3	Various techniques used for bamboo construction.			✓	
4	Stone masonry, structural and non-structural usage of stone.				✓

a. Course Name: Architectural Graphics Skills -I

b. Course Code: 01101103

c. Course Learning Outcomes:

CLO 1	Recognize the drawing materials, equipment and techniques through different exercises.
CLO 2	Employ the visualization and illustration of drawings. Developing symbols, points, lines, geometry and planes.
CLO 3	Practice sketching, rendering and coloring of objects, landscape, vehicles, buildings and human proportion.
CLO 4	Illustrate the application of sections of solids to demonstrate true shapes of surfaces in section to analyze the relation of 3D objects.

d. Teaching & Examination Scheme:

Teaching Scheme				Evaluation Scheme					
L	T	P	C	External		Internal			External
				Theory	Practical	Theory	CE	Practical	
1	1	4	6	-	50	50	-	-	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

e. Course Content:

Sr. No.	Content	Weightage	Teaching Hours
1	Sketching (Object drawing, landscape, vehicles, buildings, in relation to human scale and proportion)	5%	4
2	Basic rendering and coloring techniques.	5%	2
3	Basic drafting, symbols and lettering.:	10%	10
4	Point and Lines (straight and curvilinear lines).	10%	10
5	Principles of plane geometry, scales.	10%	10
6	Orthographic projection of points, lines, planes and solids:	10%	10
7	Solid geometry: sections of solids, simple and complex solids.	10%	10
8	Surface development of solids -paper models and drawings.	10%	10
9	Auxiliary projections as an extension of orthographic projections	10%	10
10	Applications to sections of solids to obtain true shapes of surfaces in section	10%	10
11	Interpenetration of geometric solids and conditions of Intersections	10%	10

f. Text Book and Reference Book:

1. Architectural Graphics Francis D.K Ching, John Wiley
2. Engineering Drawing N.D. BHATT & V.M. PANCHAL; CHAROTAR PUBLISHING HOUSE
3. Rendering with Pen & Ink Robert Gill, Thames & Hudson Ltd.
4. Visualization Techniques Richard B. Leinbach, Prentice Hall
5. Perspective for Architecture Georg Schaarwachter, F.A Praeger

g. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3	CLO4

1	Sketching (Object drawing, landscape, vehicles, buildings, in relation to human scale and proportion)	✓			
2	Basic rendering and coloring techniques.	✓	✓		
3	Basic drafting, symbols and lettering.:		✓	✓	
4	Point and Lines (straight and curvilinear lines).		✓		✓
5	Principles of plane geometry, scales.				
6	Orthographic projection of points, lines, planes and solids:			✓	
7	Solid geometry: sections of solids, simple and complex solids.				✓
8	Surface development of solids -paper models and drawings.				✓
9	Auxiliary projections as an extension of orthographic projections				✓
10	Applications to sections of solids to obtain true shapes of surfaces in section				✓
11	Interpenetration of geometric solids and conditions of Intersections				✓

a. Course Name: Evolution of Architecture -I

b. Course Code: 01101104

c. Course Learning Outcomes:

CLO 1	Outline ascent of man and evolution of ancient civilization.
CLO 2	Support man and his culture as a determinant of architecture design and settlement patterns.
CLO 3	Compare and contrast settlement patterns and house forms through the lens of climate, culture, community, society, economy, politics, natural terrain etc
CLO 4	Correlate the evolution of society with architectural forms to understand societal norms.

d. Teaching & Examination Scheme:

Teaching Scheme				Evaluation Scheme					
L	T	P	C	External		Internal			Total
				Theory	Practical	Theory	CE	Practical	
1	1	1	3	50	-	50	-	-	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

e. Course Content:

Sr. No.	Content	Weightage	Teaching Hours
1	Stone Age (Palaeolithic, Mesolithic and Neolithic Age), Proto historic period and Historic period	10%	4
2	Four Oldest River Valley Civilizations: Indus Valley Civilization (along with Vedic Planning principles), Mesopotamian Civilization, Egyptian Civilization, Chinese Civilization	60%	30
3	Greek Civilization:	15%	7
4	Roman Civilization:	15%	7

f. Text Book and Reference Book:

1. Ascent of Man Jacob Bronowski, RHUK
2. A World History of Architecture Michael W. Fazio, Marian Moffett and Lawrence Wodehouse, Laurence King Publishing
3. Early civilizations Egypt, Mesopotamia, the Aegean (History of Art & Architecture) by Walther Wolff, Herbert Press Ltd.
4. World History Ancient Civilizations by Mc Dougal Little, McDougal Littel
5. Greek Architecture A.W Lawrence, Yale University Press
6. Principles of Roman Architecture Mark Wilson Jones, Yale University Press

a. Course Name: Architecture and Environment

b. Course Code: 01101105

c. Course Learning Outcomes:

CLO 1	Established relationship between architecture and environment.
CLO 2	Analyse the significance of the contextual factors in shaping architecture.
CLO 3	Justify culture as a determinant of architecture in rural and urban areas and religious monuments etc.

d. Teaching & Examination Scheme:

Teaching Scheme				Evaluation Scheme					
L	T	P	C	External		Internal			
				Theory	Practical	Theory	CE	Practical	
2	1	0	3	50	-	50	-	-	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

e. Course Content:

Sr. No.	Content	Weightage	Teaching Hours
1	Environment: Natural (Ecological) , Built (Man- made/ Architectural) and Social (Societal/Communal)	25%	13
2	Architecture: Role of Architecture in governing creation and perception of a space,	15%	7
3	Culture as a determinant of Architecture: To be learnt through the study of Rural and Urban areas - Old town/city areas, Religious monuments, etc.	30%	14
4	Understanding Regional approaches in the application of the principals of climate control in the Design of Buildings through the study of Traditional House Forms & Settlement pattern in various tropical climates. (Basic vernacular shelters from various regions such as Himalayan, Deserts, Coasts, Forests, etc.)	30%	14

f. Text Book and Reference Book:

1. Traditional Architecture: House form of the Islamic community of Bohras in Gujarat Madhavi Desai
2. Handmade Houses & Other Buildings: The world of Vernacular Architecture John May and Anthony Reid, Thames & Hudson
3. Traditional Architectural Forms of Malabar Coast Ashalatha Thampuran, Vastu vidya pratishthanam Academic Centre
4. Vistara: The Architecture of India - Catalogue of the Exhibition edited by Carmen Kagal; The Festival of India; Enter Edition
5. Prathaa: Kath-Khuni Architecture of Himachal Pradesh Bharat Dave, Jay Thakkar and Mansi Shah; SID Research Cell, School of Interior Design, CEPT University; First

a. Course Name: Elements of Architecture - I

b. Course Code: 01101106

c. Course Learning Outcomes:

CLO 1	Identify the motions of space in architecture through the study of basic parts of architecture.
CLO 2	To discover the role of architecture in creation of tangible elements with respect to time, space, people, form and order.
CLO 3	Understanding design principles.

d. Teaching & Examination Scheme:

Teaching Scheme				**Evaluation Scheme**					
L	**T**	**P**	**C**	External		Internal			Total
				Theory	Practical	Theory	CE	Practical	
1	1	1	3	50	-	20	-	30	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

e. Course Content:

Sr. No.	**Content**	**Weightage**	**Teaching Hours**
1	Introduction to tangible and intangible attributes of elements in Architecture:	20%	10
2	Design Principles: Understanding design principles like Rhythm, Harmony & Character, Symmetry & Asymmetry, Balance, Hierarchy, Centrality, Radiality, Linearity, etc. through study of various design compositions by Precedents in architecture.	40%	**19**
3	Elements & Aspects of Architecture: To understand the role of Architecture in creation of a physical enclosure/shelter/built environment with respect to the following: Time, Space and People Form, Space and Order	40%	**19**

f. Text Book and Reference Book:

1. FORM, SPACE AND ORDER Francis D.K Ching, John Wiley & Sons
2. Precedents in Architecture Analytic Diagrams, Formative Ideas, and Partis by Roger H. Clark and Michael Pause, Wiley
3. Concepts of Space in Indian Traditional Architecture Yatin Pandya; Mapin Publishing

a. Course Name: Related study Programme-I

b. Course Code: 01101107

c. Course Learning Outcomes:

CLO 1	Practice various aspects of architecture based on exposure through outdoor activities.
CLO 2	Evaluate architecture designs based on sites visits.
CLO 3	Outline sketching measure drawing literature review questionnaire photographs etc for architectural sites and design.

d. Teaching & Examination Scheme:

Teaching Scheme				**Evaluation Scheme**					
L	**T**	**P**	**C**	External		Internal			Total
				Theory	Practical	Theory	CE	Practical	
0	2	0	2	-	-	60	-	40	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

e. Course Content:

Sr. No.	**Content**	**Weightage**	**Teaching Hours**
1	Mud construction, Manufacturing of Bricks in Kilns and its properties, Manufacturing of Cement and its properties, ongoing construction site s, etc.:	50%	16
2	Vernacular and Traditional Structures:	30%	**10**
3	Heritage Monuments:	20%	**6**

f. Textbook and Reference Book: NA

g. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3
1	Field Visit, Site Visits and documentation	✓	✓	✓

Semester II

a. Course Name: Architectural Design - II

b. Course Code: 01101151

c. Course Learning Outcomes:

CLO 1	Interpret the process of spatial design.
CLO 2	Demonstrate the form making in terms of solids and voids by employing the principles of architectural and spatial planning.
CLO 3	Express the application of basic design in architecture.
CLO 4	Explain the design terminologies and visualise the space making in terms of functional designed spaces.

d. Teaching & Examination Scheme:

Teaching Scheme				Evaluation Scheme					
L	T	P	C	External		Internal			Total
				Theory	Practical	Theory	CE	Practical	
2	2	4	8	-	-	20	20	60	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

e. Course Content:

Sr. No.	Content	Weightage	Teaching Hours
1	**Study of planar and paper forms:**	15%	19
2	**Study of solid and voids:**	15%	19
3	**Application of basic design in architecture:**	15%	19
4	**Study of abstract de signs:**	15%	19
5	**Principles of architectural planning:**	20%	26
6	**Implication of basic requirements in design:**	20%	26

f. Text Book and Reference Book:

1. FORM, SPACE AND ORDER Francis D.K Ching, John Wiley & Sons
2. Basic Design Principles of Architecture, Leonard S. Parker and Hijun Yu; CreateSpace Independent Publishing Platform
3. Trans formation: Basic Principles and Methodology of Design Roland Knauer, Birkhauser
4. Basic Design Principles of Architecture Leonard S. Parker and Hijun Yu; CreateSpace Independent Publishing Platform
5. Folding Techniques for Designers: From Sheet to Form Paul Jackson; Laurence King Publishing; First

g. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3	CLO4
1	**Workshop of planar and paper forms:**	✓	✓		
2	**Workshop of solid and voids:**	✓	✓		
3	**Application of basic design in architecture:**		✓		
4	**Workshop of abstract designs:**		✓	✓	
5	**Principles of architectural planning:**			✓	
6	**Implication of basic requirements in design:**	✓			✓

a. Course Name: Building Materials & Construction Technology -II

b. Course Code: 01101152

c. Course Learning Outcomes:

CLO 1	Reconstruct the L and T junctions in different thicknesses of brick wall at right/acute/obtuse angled joints, brick foundation and complex arches.
CLO 2	Discover the process of acquiring, conversing, seasoning and sawing of timber.
CLO 3	Differentiate the market forms of timber, their joineries, different applications such as truss, floors, etc.
CLO 4	Recognize different construction materials in market such as ACP, metal, glass, paint, timber boards, tiles, etc.

d. Teaching & Examination Scheme:

Teaching Scheme				**Evaluation Scheme**					
L	**T**	**P**	**C**	External		Internal			**Total**
				Theory	Practical	Theory	CE	Practical	
2	1	2	5	50	-	20	30	-	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

e. Course Content:

Sr. No.	**Content**	**Weightage**	**Teaching Hours**
1	Advanced brick construction and masonry. L & T Junctions in different thicknesses of brick wall at Right/Acute/Obtuse Angled joints, brick foundation and geometry of complex brick arches.	35%	28
2	Timber: Acquiring, conversion, seasoning and sawing of timber; market forms of timber, timber joineries, timber floors, timber trusses, various timber construction techniques.	35%	**28**
3	Study of various materials: ACP (Aluminium Composite Panels), Metal, Glass, Paint, Timber boards, Tiles, etc.	30%	**24**
4	Classification and types of stone, types of stone masonry, structural and non-structural usage of stone.	20%	**16**

f. Text Book and Reference Book:

1. Construction of Buildings R. Barry, Wiley - Blackwell;1
2. Building Construction Illustrated Francis D.K Ching, Wiley
3. Building construction Handbook Roy Chudley and Roger Greeno
4. Building construction W.B McKay, Pearson

g. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3	CLO4
1	Earth construction techniques (Adobe, Cob, Rammed Earth, Pressed Brick, Wattle & Daub).	✓			

2	Composition of good brick earth, manufacturing of bricks, classification of bricks, types of bricks, brick-bonds		✓		
3	Various techniques used for bamboo construction.			✓	
4	Stone masonry, structural and non-structural usage of stone.				✓

a. Course Name: Architectural Graphics Skills -II

b. Course Code: 01101153

c. Course Learning Outcomes:

CLO 1	Prepare the measure drawing of any building implying technical representation of materials and textures.
CLO 2	Develop the perspective and sciography in the given examples.
CLO 3	Illustrate and draft the cut away views along with complex isometric and axonometric views.
CLO 4	Produce model making in different media, and colours.

d. Teaching & Examination Scheme:

Teaching Scheme				Evaluation Scheme					
L	T	P	C	External		Internal			Total
				Theory	Practical	Theory	C.E.	Practical	
1	1	4	6	-	50	-	50	-	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

e. Course Content:

Sr. No.	Content	Weightage	Teaching Hours
1	Measure drawing:	15%	16
2	Perspective and sciography:	15%	16
3	Cut-away views:	15%	16
4	Complex isometric and axonometric views:	15%	16
5	Painting	5%	**6**
6	Technical representation of materials and textures	15%	16
7	Model making in different media, colour presentation.	15%	16

f. Text Book and Reference Book:

1. Sciography, or, Examples of shadows: And rules for their projection, intended for the use of architectural draughts men Joseph Gwilt, J. Taylor
2. Perspective: A Guide for Artists, Architects and Designers Gwen White, Batsford
3. Perspective for Architecture, Georg Schaarwachter, F.A Praeger
4. Rendering with Pen & Ink; Robert Gill, Thames & Hudson Ltd.
5. Engineering Drawing Plane and Solid Geometry; N.D. Bhatt; Charotar Publishing House

g. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3	CLO4
1	Workshop of Measure drawing:	✓			
2	Workshop of Perspective and sciography:	✓			
3	Workshop of Cut-away views:		✓		
4	Workshop of Complex isometric and axonometric views:			✓	
5	Workshop of Painting				✓
6	Survey of Technical representation of materials and textures				✓
7	Workshop of Model making in different media, colour presentation:				✓

a. Course Name: Evolution of Architecture -II

b. Course Code: 01101154

c. Course Learning Outcomes:

CLO 1	Compare and contrast amongst architectural elements, stylistic features, symbolism and concepts in Indian Architecture.
CLO 2	Discuss the mapping of the architectural evolution based on the knowledge of vedic, hindu and indoislamic architecture.
CLO 3	Justify the architecture of Indian continent as a whole based on relevant architectural form.

d. Teaching & Examination Scheme:

Teaching Scheme				Evaluation Scheme					
				External		Internal			Total
L	T	P	C	Theory	Practical	Theory	C.E.	Practical	
1	1	1	3	50	-	20	30	-	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

e. Course Content:

Sr. No.	Content	Weightage	Teaching Hours
1	Vedic Architecture:	5%	3
	Buddhist Architecture The Buddhist Period in India and its Monuments including Buddhist Chaitya Halls, Viharas and Stupas	15%	7
2	Early temple forms derived after the decline of the Maury an dynasty in India. Development of Indian Temple Architecture - Modes and Languages of Indian Temple Architecture, with illustrations of North Indian, Central Indian and South Indian Temples. Regional water monuments of Gujarat and Rajasthan: Step-wells (Vav) and Reservoirs (Kund). Residential typologies: Pols, Khadkis, Wadas	40%	19
3	Indo Islamic Architecture: Beginnings of Islamic Architecture in India with special reference to basic early types of monuments: Mosque (Masjid), Mausoleum (Maqbarah), Mortuary Complex (Rauza) Remarkable monuments built by Islamic invaders in a chronological order ± Arabsand Afghans (Qutub -ud-din Aibak and his Slave dynasty), Khiljis and Tughlaqs, Lodi and Mughal dynasties Development of various regional (provincial) styles of Islamic Architecture: - Jaunpur Style - Bengal Style - Malwa or Mandu Style - Different Styles at Deccan - Monuments at Gujarat- Sultanate monuments	40%	19

f. Text Book and Reference Book:

1. India, the oldest surviving civilization; Alok Bhattacharya; B.R Publishing Corporation
2. Indian Architecture (Buddhist & Hindu) Percy Brown; Taraporewala Publications
3. Indian Architecture (Indo Islamic); Percy Brown; Taraporewala Publications
4. The Architecture of India; Satish Grover; Vikas Publishing House
5. Temple Architecture in India Adam Hardy, John Wiley & sons
6. The History of Architecture in India Christopher; Tadgell, Phaidon
7. Vistara: The Architecture of India - Catalogue of the Exhibition edited by Carmen Kagal; The Festival of India; Enter Edition
8. The Courtyard Wada of Maharashtra Rupa Raje Gupta; NIASA, Council of Architecture; First

a. Course Name: Architecture and Environment-II

b. Course Code: 01101155

c. Course Learning Outcomes:

CLO 1	Establish the relationship between architecture and climate.
CLO 2	Categorise human comfort conditions through comfort chart, comfort zone, effective temperature and design spaces.
CLO 3	Predict impact of climate and building on ecological balance.

d. Teaching & Examination Scheme:

Teaching Scheme				Evaluation Scheme					
L	T	P	C	External		Internal			Total
				Theory	Practical	Theory	C.E.	Practical	
2	1	0	3	50	-	20	30	-	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

e. Course Content:

Sr. No.	Content	Weightage	Teaching Hours
1	Climate Constituent elements, Classification of tropical climatic zones. Effect of climate on man, shelter and environment.	10%	4
2	Human comfort conditions Comfort chart, Comfort Zone, Effective temperature	10%	4
3	Macroclimate and Micro climate	10%	4
4	Effect of landscape Elements on Climate and Architecture	10%	4
5	Impact of climate and building on Ecological balance± introduction.	15%	8
6	Solar radiation and Architecture. Thermal effect on building materials.	15%	8
7	Ventilation: Air movement & fenestration, solar orientation, Sun path pattern & shading devices, Air flow patterns inside buildings and in building layouts. Effect of Humidity on buildings.	15%	8
8	Effect of Humidity on buildings	15%	8

f. Text Book and Reference Book:

1. Climate and Architecture Dahl, Routledge.
2. Design with Climate: Bioclimatic Approach to Architectural Regionalism; Victor Olgyay,; Princeton University Press
3. Man, Climate and Architecture (Architectural Science) Baruch Givoni; Elsevier Science Ltd
4. Under the Sun Desert Style and Architecture
5. Suzi Moore, Terrence Moore and Stewart Udgall; Bulfinch
6. Design Primer for Hot Climates; Allan Konya and Maritz Vandenberg; Archi media Press Limited

a. Course Name: Elements of Architecture - II

b. Course Code: 01101156

c. Course Learning Outcomes:

CLO 1	Recognise the notions of space in architecture through the study of different elements those constitute the basic parts of physical/built environment.
CLO 2	Sketch the meaning of anatomy and evolution of space making and use the attributes and spatial roles of different elements of architecture.
CLO 3	Interpret various architectural elements evolved through the ages: roof, wall, floor, column, window, door, stairs, etc. and use them in their designs.

d. Teaching & Examination Scheme:

Teaching Scheme				**Evaluation Scheme**					
L	**T**	**P**	**C**	**External**		**Internal**			**Total**
				Theory	**Practical**	**Theory**	**C.E.**	**Practical**	
1	1	1	3	50	-	20	20	10	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

e. Course Content:

Sr. No.	**Content**	**Weightage**	**Teaching Hours**
1	To study the Anatomy, Evolution, Attribute s, Spatial Role, Applications and De sign considerations of the various Architectural Elements evolved through the ages: Roof, Wall, Floor, Column, Window, Door and Stair, etc.::	100%	48

f. Text Book and Reference Book:

1. Elements of Space making Yatin Pandya; Mapin Publishing
2. A Visual Dictionary of Architecture Francis D.K Ching, John Wiley & Sons
3. Dictionary of Architecture and Building Construction
4. Nikolas Davies and Erkki Jokiniemi; Elsevier (Architectural Press)

g. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3
	Workshop of various Architectural Elements	✓	✓	✓

a. Course Name: Related study Programme-II

b. Course Code: 01101157

c. Course Learning Outcomes:

CLO 1	This subject helps students to Study of the visited sites through sketching, measure drawing, literature review, questionnaire, photography, etc
CLO 2	Evaluate architecture designs based on sites visits.
CLO 3	It provides a live exposure to the students through outdoor study trips and tours, conducted to develop an understanding of various aspects of Architecture.

d. Teaching & Examination Scheme:

Teaching Scheme				**Evaluation Scheme**					
L	**T**	**P**	**C**	External		Internal			**Total**
				Theory	Practical	Theory	C.E.	Practical	
0	2	0	2	-	-	**-**	60	40	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

e. Course Content:

Sr. No.	**Content**	**Weightage**	**Teaching Hours**
1	Study of the visited site s through sketching, measure drawing, literature review, questionnaire, photography, etc.:	100%	32

f. Text Book and Reference Book:

NA

g. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3
1	Field Visit, Site Visits and documentation	✓	✓	✓

Semester III

h. Course Name: Architectural Design - III

i. Course Code: 01101201

j. Course Learning Outcomes:

CLO 1	Illustrate designing to small institutional projects of low complexity.
CLO 2	Apply the knowledge of extracting principles from nature to be used in architecture.
CLO 3	Devise the design criteria of small institutional projects in terms of activities, functions and spaces

k. Teaching & Examination Scheme:

Teaching Scheme			Credit	Evaluation Scheme					
				External		Internal			Total
L	T	P		Theory	Practical	Theory	CE	Practical	
2	2	4	8	-	-	20	20	60	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

l. Course Content:

Sr. No.	Content	Weightage	Teaching Hours
1	**How to design small institutional projects of low complexity with focus on spatial analysis and multipurpose usage of spaces; by extracting principles from nature (Natural Items/Objects) & their application in architecture, forming abstract concepts:** • **Conducting study of selective Natural items/objects.** • **Understanding the design criteria of small institutional projects in Term of activities, functions and spaces.** • **Process of form-making and space-making with respect to the human scale and proportions incorporating the programmatic requirements of the project, site constraints and extracting underlying structural/architectural/design principles from the studied natural items/objects.** • **Preparation of Architectural drawings and models.**	100%	**128**

m. Text Book and Reference Book:

1. Spaces Inspired by Nature: Shirish Beri (Text Book) Yashwant Pitkar; Edition Axel Menges
2. Architecture follows Nature: Biomimetic Principles for Innovative Design (Text Book) Ilaria Mazzoleni and Shauna Price; CRC Press Series in Biomimetics
3. Biomimetics in architecture: architecture of life and buildings (Text Book) Petra Gruber, Ambra Verlag
4. Bio-structural Analogues in Architecture (Text Book) Joseph Lim Ee Man; BIS Publishers

5. Biomimetics for Architecture and Design (Text Book) Goran Pohl and Werner Nachtigall

n. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3
1	**Conducting study of selective Natural items/objects**	✓	✓	
2	**Process of form-making and space-making with respect to the human scale**	✓	✓	
3	**Preparation of Architectural drawings and models.**		✓	✓

h. Course Name: Building Materials & Construction Technology -III

i. Course Code: 01101202

j. Course Learning Outcomes:

CLO 1	Discuss about new materials used in construction.
CLO 2	Discuss about various hardware, sanitary fixtures and plumbing fixtures available in the market.
CLO 3	Assess the building elements made out of wood, steel, pvc, aluminum, etc.

k. Teaching & Examination Scheme:

Teaching Scheme			Credit	Evaluation Scheme					
				External		Internal			Total
L	T	P		Theory	Practical	Theory	CE	Practical	
2	1	2	5	50	-	20	30	-	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

l. Course Content:

Sr. No.	Content	Weightage	Teaching Hours
1	Earth construction techniques (Adobe, Cob, Rammed Earth, Pressed Brick, Wattle & Daub). Door, Window and Staircase: Door: The element, types of doors, doors in different materials like timber, glass, metal, PVC, etc. Window: The element of window, types of windows, windows in different materials like timber, glass, metal/steel, etc. Staircase: The element of staircase, types of staircases, staircase in different materials like glass, metal, timber, RCC, etc.	**50%**	**40**
2	New materials used in Construction and various hardware, sanitary fixtures and plumbing fixtures available in the market.: New materials and their use in building construction. Building elements made out of wood, steel, PVC, aluminium, Etc. Hardware, sanitary fixtures and plumbing fixtures.	**50%**	**40**

m. Text Book and Reference Book:

1. Rendering in SketchUp: From Modeling to Presentation for Architecture, Landscape Architecture and Interior Design (TextBook) Daniel Tal; Wiley
2. Building construction illustrated (TextBook) Francis D.K Ching; Wiley
3. Fundamentals of Building Construction: Materials and Methods (TextBook) Edward Allen and Joseph Iano; Wiley
4. Building Construction Metric ± Volume 1 (Text Book) W.B McKay, Pearson; Orient Longman Pvt. Ltd.
5. The Construction of Buildings ± Barry 2 (Text Book) Robin Barry; Wiley-Blackwell

h. Course Name: Architectural Graphics Skills -III

i. Course Code: 01101203

j. Course Learning Outcomes:

CLO 1	Operate drafting of designs and visulisation techniques through 3D modelling in software.
CLO 2	Demonstrate two dimensional architetctural drawings including plans, elevations and sections.
CLO 3	Summarise incorporating layers, line-weights, texts, dimensioning and formatting of drawing for taking prints and plots.

k. Teaching & Examination Scheme:

Teaching Scheme				Evaluation Scheme					
L	T	P	C	External		Internal			External
				Theory	Practical	Theory	CE	Practical	
1	1	3	5	-	50	-	50	-	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

l. Course Content:

Sr. No.	Content	Weightage	Teaching Hours
1	Computer drafting of designs: Architectural 2D CAD drafting (Auto-Cad): Representation of two dimensional architectural drawings (including plans, elevations and sections) incorporating layers, line-weights, texts, Dimensioning and formatting of drawings for taking prints and Plots.	50%	**40**
2	3 D Modelling: 3D Modelling (Sketch Up) and basic presentation techniques: Basic three-dimensional modelling of architectural layouts imported from AutoCAD to Google Sketch-up.	50%	**40**

m. Text Book and Reference Book:

6. AutoCAD 2016 For Beginners (Textbook) CAD Folks, CreateSpace Independent Publishing Platform
7. Introduction to Google SketchUp (Textbook) Adian Chopra; Wiley
8. Google Sketch Up for Site Design: A Guide to Modelling Site Plans, Terrain and Architecture (TextBook); Daniel Tal; Wiley
9. Architectural Design with SketchUp: 3D Modelling, Extensions, BIM, Rendering, Making and Scripting (Textbook); Alexander C. Schreyer; Wiley

n. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3
1	CAD Workshop	✓		
2	Sketchup and # modelling Workshop		✓	✓

g. Course Name: Evolution of Architecture -III

h. Course Code: 01101204

i. Course Learning Outcomes:

CLO 1	Classify chronological study of the architectural developments evolved in India during their British raj.
CLO 2	Justify the development of western art and architecture.
CLO 3	Illustrate developments in European architecture after the medieval period.

j. Teaching & Examination Scheme:

Teaching Scheme				Evaluation Scheme					
				External		Internal			Total
L	T	P	C	T/D	V/P	I	Sub.	J	
2	1	1	4	50	-	20	30	-	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

k. Course Content:

Sr. No.	Content	Weightage	Teaching Hours
1	Colonial Architecture in India developed during the British Raj.: Colonial architecture in India: Influences from abroad.	40%	24
2	Chronological study of the Architectural developments evolved in Europe through the ages from 350 A.D to 1750 A.D.: Development of Western Art and Architecture: Early Christian, Byzantine, Medieval (Romanesque) and Gothic. Developments in Europe after the medieval period: The Renaissance, Baroque and Rococo.	60%	40

l. Text Book and Reference Book:

7. Splendours of Imperial India: British Architecture in the 18th and 19th centuries (Textbook) Andreas Volwahsen; Prestel Publishing
8. The Bungalow in Twentieth-Century India: The Cultural Expression of Changing Ways of Life and Aspirations in the Domestic Architecture of Colonial and Post-colonial Society (Textbook) Madhavi Desai, Miki Desai and Jon Lang; Ashgate Publishing
9. History of Architecture (Textbook) Sir Banister Fletcher; Architectural Press
10. History of Modern Art: Painting, Sculpture and Architecture (Textbook) H. H Arnason and Elizabeth C. Mansfield
11. Encyclopaedia of Architecture (Textbook) Joseph Gwilt, J. Taylor

g. Course Name: Architecture and Environment-III

h. Course Code: 01101305

i. Course Learning Outcomes:

CLO 1	Use architetctural design resolutions required in various climatic zones based on the respective design guidelines.
CLO 2	Describe passive cooling concepts formulated through scientific analysis and assumption.
CLO 3	Categorise various typpes of cooling concepts.

j. Teaching & Examination Scheme:

Teaching Scheme				Evaluation Scheme					
				External		Internal			
L	**T**	**P**	**C**	Theory	Practical	Theory	CE	Practical	
2	-	-	2	50	-	20	30	-	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

k. Course Content:

Sr. No.	Content	Weightage	Teaching Hours
1	Architectural design resolutions required in various climatic zones based on the respective design guidelines formulated through scientific analysis and assumptions.: • Day lighting: Light, its behaviour, its quantity, its components, architectural methods of borrowing day light, control of glare, etc. • Climatic Analysis and Design Tools: Mahoney Tables, Sun Path diagrams, Psychrometric charts, etc. • Response of various materials in different climatic zones. • Design guidelines for various climatic zones: Hot dry, Cold dry, Warm humid, Composite, etc. • Passive cooling concepts: Evaporative cooling, Induced ventilation, Earth sheltering, Wind tower, Earth Air Tunnel, Roof types and their thermal behaviour, Insulation and varytherm wall, etc. • Passive heating concepts: Trombe wall, Water wall, Solar chimney assisted passive heating device, Thermal storage roof, Solarium, etc	100%	32

l. Text Book and Reference Book:

6. Energy ± efficient Buildings in India (Textbook); Mili Majumdar, TERI and Ministry of Non-conventional Energy Sources
7. Passive Solar Architecture: Heating, Cooling, Ventilation and Daylighting using Natural Flows (Textbook); David A. Bainbridge and Ken Haggard; Chelsea Green Publishing
8. Climatic data handbook (Textbook); Ishwar Chand, PK Bhargava; Central Building Research Institute (India) and Tata Mc Graw Hill Publications.
9. Climate Responsive Architecture (Textbook); Arvind Krishan, Nick Baker, Simos Yannas, Steve Szokolay; Tata Mc Graw Hill Education
10. Climate Responsive Energy Efficient Passive Techniques in Buildings (Textbook); Dr. Anupama Sharma, KK Dhote & R Tiwari; , IE (I) Journal ±AR, Volume 84, April 2003, p. 17 -26.

g. Course Name: Structural Design and Analysis-I

h. Course Code: 01101206

i. Course Learning Outcomes:

CLO 1	The aim of the subject is introduction to Traditional, RCC and steel structures
CLO 2	To understand fundamental structural concepts, from an Architectural perspective.
CLO 3	It introduces them to Mechanisms of load transfer, properties of sections-centre of gravity, moment of inertia, section modulus, radius of gyration, Equilibrium of force systems, Concurrent force, co-planar forces, parallel forces etc.

j. Teaching & Examination Scheme:

Teaching Scheme				Evaluation Scheme					
				External		Internal			
L	**T**	**P**	**C**	Theory	Practical	Theory	CE	Practical	Total
2	-	2	4	50	-	20	30	-	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

k. Course Content:

Sr. No.	Content	Weightage	Teaching Hours
1	Fundamental structural concepts, from an Architectural perspective: Introduction to Traditional, RCC and steel structures. Solid, Load bearing structure, framed structures-functions, system of load transfer, importance of foundation. Structural elements of buildings-floor systems (slabs), beams, girders, trusses, column, footings and related terminology. Loads on Structure-dead load, imposed load, wind load, earthquake load, snow load, introduction of relevant IS codes of practice Mechanisms of load transfer, properties of sections-centre of gravity, moment of inertia, section modulus, radius of gyration. Relevance of these properties in the design of various structural members. Force and system of forces-composition and resolution of forces. Concurrent force, co-planar forces, parallel forces, etc. Equilibrium of force systems. Moment and its effect, couple. Beam reactions	100%	10

l. Text Book and Reference Book:

4. Basic Structures for Engineers and Architects (Textbook) Philip Garrison; Blackwell Publishing
5. Engineering Mechanics (Textbook) Hagerty and Plass; Van Nostrand
6. IS 875-1987 Code of Practice for Design Loads (Textbook) BIS; New Delhi

h. Course Name: Related study Programme-III

i. Course Code: 01101207

j. Course Learning Outcomes:

CLO 1	This subject entails understanding the significance of contextual factors in shaping settlements of a region.
CLO 2	Regional settlements of varying kinds such as - Rural settlements, Traditional towns, Fortified settlements, etc.
CLO 3	Settlements located in varying climatic contexts and terrains such as hill-top, hill-slope, foot-hill, sea-coast, desert, forest, etc.

k. Teaching & Examination Scheme:

Teaching Scheme				**Evaluation Scheme**					
L	**T**	**P**	**C**	External		Internal			Total
				Theory	Practical	Theory	CE	Practical	
0	2	0	2	-	-	60	-	40	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

l. Course Content:

Sr. No.	**Content**	**Weightage**	**Teaching Hours**
1	Significance of contextual factors in shaping settlements of a region.: Study of the visited sites through sketching, measure drawing, literature review, questionnaire, photography, discussions, etc. The following sites may be visited: Regional settlements of varying kinds such as - Rural settlements, Traditional towns, Fortified settlements, etc. located in varying climatic contexts and terrains such as hill-top, hill-slope, foot-hill, sea-coast, desert, forest, etc.	100%	32

m. Text Book and Reference Book:

NA

n. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3
1	Field Visit, Site Visits and documentation	✓	✓	✓

Semester IV

h. Course Name: Architectural Design - IV

i. Course Code: 01101251

j. Course Learning Outcomes:

CLO 1	Demonstrate various concepts of designing housing and habitat. Recognise various housing typologies.
CLO 2	Sketch innovative design application as conscious approach towards inclusive designing for people and communities. Relate the socio-cultural background and lifestyle to create residential neighbourhoods that are safe, climate responsive and contextually sensitive.
CLO 3	Design the housing and habitat in given context by employing the appropriateness of the building design and construction aspects based on the materials and craftsmanship available, climate, adoption of material or technology, prevailing socio-cultural environment etc.

k. Teaching & Examination Scheme:

Teaching Scheme				Evaluation Scheme					
L	T	P	C	External		Internal			Total
				Theory	Practical	Theory	CE	Practical	
2	2	4	8	-	-	20	20	60	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

l. Course Content:

Sr. No.	Content	Weightage	Teaching Hours
1	Various concepts of designing housing and habitat, study of various housing typologies, innovative de sign applications a s a conscious approach towards inclusive designing for people and communities, considering socio-cultural background and lifestyle: Process of housing and habitat designing of a project in a given context. The context of the project may be a traditional settlement, or any typical geographical terrain such as hill top, hill slope, foot hill, beach, desert, etc. Understanding the appropriateness of the building design and construction aspects based on the materials and craftsmanship available, climate, adoption of material or technology, prevailing socio-cultural environment, etc.	100%	128

m. Text Book and Reference Book:

6. An introduction to PREDESIGN (Textbook) Naresh Shah with Prasad Anaokar; NIASA - Council of Architecture
7. Global Housing Projects:25 buildings since; 980 (Textbook) JosepLlus Mateo; ACTAR, ETH Zurich
8. Humane habitat at low-cost: CIDCO, Belapur, New Mumbai (Textbook); Raj Rewal; Architectural Research Cell
9. Living Environments: Housing Designs (Textbook); V Doshi; Vastu Shilp Foundation for Studies and Research in Environmental Design
10. Residential Open Spaces: a behavioural analysis (Textbook); V Doshi; Vastu Shilp

Foundation for Studies and Research in Environmental Design
11. Earth Sheltered Housing Design: Guidelines, Examples and References (Textbook) the Underground Space Centre University; Van Nostrand Reinhold
12. Designing for the Homeless: Architecture That Works (Textbook) Sam Davis; University of California Press

n. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3	CLO4
1	**Design Studio**	✓	✓	✓	✓

h. Course Name: Building Materials & Construction Technology -IV

i. Course Code: 01101252

j. Prerequisite:

k. Rationale:

l. Course Learning Outcomes:

CLO 1	Explain the fundamentals of RCC construction.
CLO 2	Sketch the understanding of mechanical modes of vertical conveyance in buildings such as lift and escalator mechanism.
CLO 3	Design hollow walls such as cavity wall in bricks and hollow concrete blocks.
CLO 4	Construct the interior elements such as false ceiling and partition from different materials.

m. Teaching & Examination Scheme:

Teaching Scheme				**Evaluation Scheme**					
L	**T**	**P**	**C**	External		Internal			**Total**
				Theory	Practical	Theory	CE	Practical	
2	1	2	5	50	-	20	30	-	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

n. Course Content:

Sr. No.	**Content**	**Weightage**	**Teaching Hours**
1	Fundamentals of RCC construction, mechanical modes of vertical conveyance in buildings, hollow walls and interior elements.: Introduction to fundamentals of R.C.C. construction Formwork, scaffolding, shoring and strutting for the building Study of Lift & Escalator mechanisms and their manufacturers. Hollow walls: Cavity walls in bricks and hollow concrete blocks. False Ceiling: Asbestos sheets, soft boards, Plaster of Paris, Gypsum boards, etc. in framework of timber, steel, or Aluminium, along with details of lighting and AC grid panels and concealed lighting. Light Partitions: Timber, Asbestos sheet, soft board & glazed partitions, etc.	100%	80

o. Text Book and Reference Book:

5. Building construction illustrated (Textbook) Francis D.K Ching; Wiley
6. The construction of buildings Barry 1 (Textbook) Robin Barry; Wiley-Blackwell
7. Fundamentals of Building Construction: Materials and Methods (Textbook) Edward Allen and Joseph Iano; Wiley
8. Construction Technology (Textbook) Roy Chudley and Roger Greeno; Pearson
9. The ultimate guide to Adobe Illustrator (Textbook) Mohandes Kahraba; Kindle Edition
10. Building construction illustrated (Textbook); Francis D.K Ching; Wiley (John Wiley & Sons, Inc.)

h. Course Name: Architectural Graphics Skills -IV

i. Course Code: 01101253

j. Course Learning Outcomes:

CLO 1	Create the presentation techniques of design drawings and models in the form of panels/ portfolios/ catalogues /brochures, etc.
CLO 2	Practice the rendering of the models prepared in sketch up.
CLO 3	Develop the presentation of drawings and views by composing the same in various formats.
CLO 4	Reproduce the designs in different software such as Photoshop/ CorelDraw/ In Design/ Illustrator and PowerPoint etc.

k. Teaching & Examination Scheme:

Teaching Scheme				Evaluation Scheme					
L	T	P	C	External		Internal			Total
				Theory	Practical	Theory	C.E.	Practical	
1	1	3	5	-	50	-	50	-	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

l. Course Content:

Sr. No.	Content	Weightage	Teaching Hours
1	Rendering and presentation techniques of design drawings and models in the form of panels/ portfolios/ catalogues/ brochure s, etc. Rendering of the Models prepared in Sketch Up, etc. Presentation of drawings and views by composing the same in various formats through software such as Photoshop/ Corel Draw/ In Design/ Illustrator/ PowerPoint, etc.	100%	80

m. Text Book and Reference Book:

6. Rendering in SketchUp: From Modelling to Presentation for Architecture, Landscape Architecture and Interior Design (Textbook) Daniel Tal; Wiley
7. Photoshop: The Complete Beginners Guide Box Set to Mastering Photoshop in 24Hours or Less (Graphic Design, Adobe Photoshop, Digital Photography, Creativity) (Textbook) Edward Bailey; Kindle Edition
8. Teach Yourself Visually Power Point2016(Textbook)Barbara Boyd with Ray Anthony Visual
9. Minitrials for Adobe In Design: A quick reference or beginners and other busy people (Textbook) Susan Franz; CreateSpace Independent Publishing Platform
10. The ultimate guide to Adobe Illustrator (Textbook) Mohandes Kahraba; Kindle Edition

n. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3	CLO4
1	Rendering Workshop:	✓	✓	✓	

g. Course Name: Evolution of Architecture -IV

h. Course Code: 01101254

i. Course Learning Outcomes:

CLO 1	Recognise the modern architectural style and it's patrons.
CLO 2	Label, list and match Post modernist architectural style and the examples flourished under it.
CLO 3	Analyse the roots of the modern movement - issues of contextuality, relevance, identity and meaning of architecture in contemporary cultures.
CLO 4	Discover the contemporary developments in architecture on India and world.

j. Teaching & Examination Scheme:

Teaching Scheme				Evaluation Scheme					
				External		Internal			Total
L	T	P	C	Theory	Practical	Theory	C.E.	Practical	
1	1	1	3	50	-	20	30	-	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

k. Course Content:

Sr. No.	Content	Weightage	Teaching Hours
1	Modern Architecture, Post Modernism and Contemporary Architectural developments in a global context: • The architectural styles and buildings would be discussed in context of their period, geographical / climatic conditions, economic and political conditions, social and religious customs, construction and technology, building material and structure. • Analysing the roots of the modern movement - Issues of Contextuality, Relevance, Identity & meaning of architecture in contemporary cultures. • Beginning of Modernism ± Europe and America; the Modern movement and the international style; Post - modernism & Contemporary development. • Contemporary developments in architecture in India and world over.	100%	64

l. Text Book and Reference Book:

9. Modern Architecture A Critical History (Textbook) Kenneth Frampton; Ox ford University Press
10. Modern Architecture since 1900(Textbook) William J. R. Curtis; Phaidon Press
11. The Language of Post-Modern Architecture (Textbook) Charles Jencks; Rizzoli
12. The History of Post-Modern Architecture (Textbook) Heinrich Klotz; MIT Press
13. History of Modern Art: Painting, Sculpture and Architecture (Textbook) H. H Arnason and Elizabeth C. Mans field
14. An Encyclopaedia of Architecture: Historical, Theoretical and Practical (Textbook) Joseph Gwilt, J. Taylor; Longman, Brown, Green and Longmans
15. The Source book of Contemporary Architecture by Alex Sanchez Vidiella, Harper Design (Textbook) Alex Sanchez Vidiella; Harper Design
16. A Critical History of Contemporary Architecture 1960 -2010 (Textbook) Elie; Haddad and David Rifkind (Editors); Ashgate Publishing

g. Course Name: Architecture and Environment-II

h. Course Code: 01101155

i. Course Learning Outcomes:

CLO 1	Explain about various scientific concepts related to environment. State the building codes regarding the Energy Conservation Building Code (ECBC) India.
CLO 2	Analyse the works of research institutions and Governmental and Non-Governmental organizations related to Architecture and Environment such as LEED, BEE, IGBC, MNRE, TERI, GRIHA, GEDA, etc.
CLO 3	Identify the principles of sustainable architecture, green Architecture and eco Architecture.

j. Teaching & Examination Scheme:

Teaching Scheme				**Evaluation Scheme**					
L	**T**	**P**	**C**	External		Internal			**Total**
				Theory	Practical	Theory	C.E.	Practical	
2	1	0	3	50	-	20	30	-	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

k. Course Content:

Sr. No.	**Content**	**Weightage**	**Teaching Hours**
1	various scientific concepts, criteria, building codes and research institutions related to Architecture and Environment.: Ecology, ecosystem, environment, climate change and carbon footprint. Life Cycle Analysis Sustainable architecture, green architecture and Eco architecture Energy efficiency in buildings Research institutions, Governmental and Non - governmental organizations such as LEED, BEE, IGBC, MNRE, CRISIL, TERI, GRIHA, GEDA, IREDA, NISE, etc. Energy Conservation Building Code (ECBC) of India.	100%	32

l. Text Book and Reference Book:

7. Energy Conservation Building Code (Textbook) Ministry of Power; Government of India
8. Green Architecture (Textbook) James Wines; Taschen
9. A carbon primer for the built environment (Textbook)Simon Foxell; RIBA
10. Eco-Architecture:1000 ideas by 100 Architects (Textbook) Marta Serrats (editor); Promopress

h. Course Name: Structueral Design and Analysis - II

i. Course Code: 01101256

j. Course Learning Outcomes:

CLO 1	Interpret the strength of materials. Employ the architectural considerations in material selection for structure use.
CLO 2	Develop the concept of strength and elasticity of a material and concept of stress strain.
CLO 3	Review the conditions under which composite sections are preferred.

k. Teaching & Examination Scheme:

Teaching Scheme				Evaluation Scheme					
				External		Internal			Total
L	T	P	C	Theory	Practical	Theory	C.E.	Practical	
1	1	1	3	50	-	20	20	10	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

l. Course Content:

Sr. No.	Content	Weightage	Teaching Hours
1	strength of materials Architectural considerations in material selection for structural use Concept of strength and elasticity of a material. Concept of stress-strain. Types of stress, its importance, elastic limit, yield point, permissible stress, ultimate stress and elongation Composite sections Conditions under which composite sections ar e preferred. Bending moment and shear force. Study of variation of bending moment and shear force on a beam; point of contra flexure; Types of supporting conditions: cantilever beam, simply supported beam and continuous beam, overhanging	100%	48

m. Text Book and Reference Book:

5. Elements of Space making Yatin Pandya; Mapin Publishing
6. A Visual Dictionary of Architecture Francis D.K Ching, John Wiley & Sons
7. Dictionary of Architecture and Building Construction
8. Nikolas Davies and Erkki Jokiniemi; Elsevier (Architectural Press)

h. Course Name: Related study Programme-IV

i. Course Code: 01101257

j. Course Learning Outcomes:

CLO 1	Analyse the factors to be considered for habitat planning.
CLO 2	Develop the sensitivity towards the sensibly planned housing schemes in any Indian city.
CLO 3	Relate the contextual learning of class with the site.
CLO 4	Prepare the sketches, measure drawing, literature review, questionnaire, photography, discussion, etc. by visited cities and sites.

k. Teaching & Examination Scheme:

Teaching Scheme				**Evaluation Scheme**					
L	**T**	**P**	**C**	External		Internal			**Total**
				Theory	Practical	Theory	C.E.	Practical	
-	-	2	2	-	-	-	60	40	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

l. Course Content:

Sr. No.	**Content**	**Weightage**	**Teaching Hours**
1	factors to be considered for habitat planning.: Study of the visited sites through sketching, measure drawing, literature review, questionnaire, photography, discussions, etc. The following sites may be visited: Sensitively and sensibly planned housing schemes in any of the Indian cities such as Delhi, Chandigarh, Jaipur, Indore, etc.	100%	32

m. Text Book and Reference Book:

NA

n. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3	CLO4
1	Field Visit, Site Visits and documentation	✓	✓	✓	✓

Semester V

o. **Course Name:** Architectural Design-V
p. **Course Code:** 01101301
q. **Course Learning Outcomes:**

CO1	Identify the approach to the institutional design process in terms of environmental concerns and energy efficiency.
CO2	Employ the understanding of client contract and active passive user group.
CO3	Recognize the institutional character of the buildings as well as idea of an institutional image/ character and ordering theme/ idea etc.
CO4	Design the organisation and disposition of spaces.

r. **Teaching & Examination Scheme:**

Teaching Scheme				Evaluation Scheme					
L	T	P	C	Internal Evaluation			ESE		Total
				Theory	*C.E.	Practical	Theory	P	
2	2	6	10	20	20	60	-	-	**100**

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

s. **Course Content:**

Sr. No.	Content	Weightage	Teaching Hours
1	**Understand the approach to the institutional design process**: Understanding the institutional character Organization and disposition of spaces. Relationship of different functional, service and movement areas Diversity of user groups, circulation routes.	**80%**	
2	**User group needs and client requirements.** Influence of culture, climate & technology. Site planning/layout/zoning/ circulation. Landscaping. Idea of an Institutional image/character & Ordering Theme / Idea / Concept	**20%**	

t. **Text Book and Reference Book:**

1. An introduction to PREDESIGN (Textbook); Naresh Shah with Prasad Anaokar; NIASA - Council of Architecture
2. Design Strategies in Architecture: An Approach to the Analysis of Form (Textbook) Geoffrey Baker; Taylor and Francis
3. An Analysis of Form (Textbook); Le Corbusier and Geoffrey Baker; Taylor and Francis
4. Space, Time and Architecture: The Growth of a New Tradition (Textbook) S. Giedion; Harvard University Press
5. University Trends: Contemporary Campus Design (Textbook) Jonathon Coulson, Parul Roberts and Isabelle Taylor; Routledge

a. **Course Name:** Building Materials & Construction Technology-V
b. **Course Code:** 01101302
c. **Course Learning Outcomes:**

CO1	Analyse the behaviour of two different materials such as concrete and steel.
CO2	Explain the pre cast and pre stressed system.
CO3	Identify the various possibilities of both the building materials.
CO4	Describe various building elements, components, and different processes and products

d. **Teaching & Examination Scheme:**

Teaching Scheme				Evaluation Scheme					
				Internal Evaluation			ESE		
L	**T**	**P**	**C**	**Theory**	***C.E.**	**Practical**	**Theory**	**P**	**Total**
2	1	2	5	20	30	-	50	-	**100**

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

e. **Course Content:**

Sr. No.	Content	Weightage	Teaching Hours
1	**Concrete and steel, their various possibilities, building elements and components, different processes and products:** Materials -Steel and Concrete - R.C. C. Elements - P.C.C. Elements - Precast Elements Different type of slabs and vaults. Introduction to advance shallow and deep foundations RCC column foundation - Retaining walls, Raft, Pile foundation, cantilever, & combined footing Thermal Insulations Constructional/Expansion joints	**60%**	
2	**Study pre-ca st and pre-stressed systems:** Introduction to structural steel and rolled steel sections. Introduction to footings for steel columns. Conceptual study of general connections ± Beam to beam connections ± Beam to column connections ± column to column connections ± column to foundation connection. Concept of built up beams and columns ± recommended uses. Concept of lacings, battening & importance of bracings. Building Construction and precognitions/safety measures Protection of Structures Different preservative measures and procedures: Damp proofing, Water proofing, Anti termite treatments, etc.	**40%**	

f. **Text Book and Reference Book:**

1. Building Construction Illustrated (Textbook) Francis; D.K Ching; Wiley (John Wiley & Sons, Inc.)
2. 'Design o Steel Structures (Textbook); Arya and Ajmani; Nem Chand
3. Building construction (Textbook); Roy Chudley and Roger Greeno; Routledge

a. **Course Name:** Building Services & Equipment's - I
b. **Course Code:** 01101303
c. **Course Learning Outcomes:**

CO1	Explain the fundamentals of all types of services required in a building along with various relevant equipments and fittings available in the market.
CO2	Describe how to prepare a basic layout of various services and relevant details.
CO3	Design Water supply pipes, taps, fittings available in various materials, size and their classification. Design Basic layout of water supply for a residence and apartment block, and calculation of supply requirements based on standards.

d. **Teaching & Examination Scheme:**

Teaching Scheme				**Evaluation Scheme**					
L	**T**	**P**	**C**	**Internal Evaluation**			**ESE**		**Total**
				Theory	***C.E.**	**Practical**	**Theory**	**P**	
1	-	2	3	20	30	-	50	-	**100**

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

e. **Course Content:**

Sr. No.	**Content**	**Weightage**	**Teaching Hours**
1	**Fundamentals of all types of service s required in a building along with various relevant equipment's and fittings available in the market.:** Water Supply- Sources, demand & elements of the system, layout and design of system, connections with municipal supply, rain water harvesting systems. Water supply pipes, taps, fittings available in various materials, size and their classification Basic layout of water supply for a residence and apartment block, and calculation of supply requirements based on standards. Connection of lines to fittings. Underground, overhead and internal storage tanks and supply lines. Pumping mechanisms.		
2	**Sanitation and its importance.** Sanitary fixtures and fittings available in the market. Planning and layout of sanitary fittings in residences. Sewers details of construction, inspection chambers, trap chambers & Septic tanks		
	To learn to prepare a basic layout of various service s and relevant details: **Drainage system for residences.** Waste water drainage-traps of various types detail sand use. Rain water disposal and roof drain. Storm water disposal systems - combined and independent systems		

f. Text Book and Reference Book:

Water, Sanitation and Waste Services for Buildings (Textbook) A.F.E Wise and John Swaffield; Butterworth Heinemann
2. Water Supply & Sanitary Engineering (Textbook) G.S Birdie; Dhanpat Rai Publishing Company
3. Building Services (Textbook) F. Halls; Routledge

a. **Course Name:** Surveying & Levelling
b. **Course Code:** 01101304
c. **Course Learning Outcomes:**

CO1	Demonstrate the techniques for presentation of measure drawing and setting out building on site.
CO2	Practice various instruments used for surveying.
CO3	Explain levelling.
CO4	Use chain survey and compass survey to perform surveying

d. **Teaching & Examination Scheme:**

Teaching Scheme				Evaluation Scheme					
				Internal Evaluation			ESE		Total
L	**T**	**P**	**C**	**Theory**	***C.E.**	**Practical**	**Theory**	**P**	
1	1	-	2	20	30	-	50	-	**100**

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

e. **Course Content:**

Sr. No.	Content	Weightage	Teaching Hours
1	**Techniques for presentation of measure drawing and setting out Building on site.** Measure drawing techniques of presenting survey maps. Understanding about various instruments used for surveying, chain survey and compass survey. Preparing measured drawings of surveyed area and buildings. Levelling: Equipment used; principles and practice. Taking vertical and horizontal measurements on plain and contoured sites, calculation of areas, mapping contours and site profiles etc. Setting out of buildings on a site.		

f. **Text Book and Reference Book:**

1. Fundamentals of Surveying (Textbook) S.K Roy; PHI Learning Pvt. Ltd.
2. 'Site Surveying and Levelling (Textbook) John Clancy; Routledge
3. Surveying and Levelling (Textbook); R. Subramaniam; Oxford University Press

a. **Course Name:** Landscape Architecture
b. **Course Code:** 01101305
c. **Course Learning Outcomes:**

CO1	Analyse the principles of landscape design, its techniques and application.
CO2	Sketch the understanding of ecology, ecosystem and concept of environmental conservation.
CO3	Design the elements of landscape such as landforms, plant materials, water, rocks, lighting, etc.
CO4	Explain historical and contemporary attitudes to landscape in Indian and other context.

d. **Teaching & Examination Scheme:**

Teaching Scheme				**Evaluation Scheme**					
L	**T**	**P**	**C**	**Internal Evaluation**			**ESE**		**Total**
				Theory	***C.E.**	**Practical**	**Theory**	**P**	
1	-	2	3	20	-	30	50	-	**100**

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

e. **Course Content:**

Sr. No.	**Content**	**Weightage**	**Teaching Hours**
1	**Principles of landscape design, its technique s and application.:** Ecology, Environment, Components, Ecosystem at various levels, conservation of natural resources, rainwater harvesting Elements of Landscape: Landforms, plant materials, water, rocks, lighting etc.		
2	**Ecology, ecosystem and the concept of environmental conservation.:** Types of soils, plant materials, trees, shrubs, ground covers, creepers (flowering and non -flowering), rocks, stones and water bodies Surfacing Materials, landforms, manmade elements. Historical and contemporary attitudes to landscape in Indian and other context.		

f. **Text Book and Reference Book:**

1. Landscape Graphics (Textbook) Grant Reid; Watson Guptill
2. Residential Landscape Architecture: Design Process for the Private Residence (Textbook) Norman K. Booth and James E. Hiss; Prentice Hall
3. Landscape Design: A cultural and Architectural History (Textbook) Elizabeth Barlow Rogers; Harry; Harry N. Abrams
4. Form and Fabric in Landscape Architecture: A visual introduction (Textbook) Catherine Dee; Taylor and Francis
5. Introductory Lands c ape Architecture (Textbook); Michael Laurie; Prentice Hall

a. **Course Name:** Structural Design & Analysis- III
b. **Course Code:** 01101306
c. **Course Learning Outcomes:**

CO1	Analyse the structures.
CO2	Define the determinate and indeterminate structures
CO3	Explain basic methods of analysis for moment distribution method.
CO4	Practice the concept of deflection of structures and importance of deflection in design of structures.

d. **Teaching & Examination Scheme:**

Teaching Scheme				**Evaluation Scheme**					
L	**T**	**P**	**C**	**Internal Evaluation**			**ESE**		**Total**
				Theory	***C.E.**	**Practical**	**Theory**	**P**	
2	1	2	5	20	30	-	50	-	**100**

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

e. **Course Content:**

Sr. No.	**Content**	**Weightage**	**Teaching Hours**
1	**Analysis of Structures:** Definition of determinate and indeterminate structures. Fixed beam and Continuous Beams. Basic methods of Analysis (Moment Distribution Method). Introduction to advanced methods of analysis. Analysis of continuous beams of two to four spans. Truss, types of trusses, analysis of two -dimensional trusses using joint & graphic al method. Arch, types of arches, analysis of three hinges arches. Concept and analysis of portal frame. Concept of deflection of structures and importance of deflection in design of structures.		

f. **Text Book and Reference Book:**

1. Mechanics of Structures - I & II (Textbook); S.B Junnarkar and H.J Shah; Charotar Publishing House
2. Strength of Materials (Textbook) R.S Khurmi; S. Chand
3. Fundamentals of Structural Analysis and Design (Textbook) J.P Parikh; Charotar Publishing House

a. **Course Name:** Related Study Programs-V
b. **Course Code:** 01101307
c. **Course Learning Outcomes:**

CO1	Identify the aspects of execution and construction of a building.
CO2	Analyse various concerns related to the execution of a building.
CO3	Recognise construction process at various stages/ junctions/ locations.
CO4	Practice respective construction techniques through site studies of various construction sites.

d. **Teaching & Examination Scheme:**

Teaching Scheme				Evaluation Scheme					
				Internal Evaluation			ESE		
L	**T**	**P**	**C**	**Theory**	***C.E.**	**Practical**	**Theory**	**P**	**Total**
-	2	-	2	-	60	40	-	-	**100**

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

e. **Course Content:**

Sr. No.	Content	Weightage	Teaching Hours
1	**Architectural and planning aspects of an institutional building campus.:** Study of selective institutional campuses such as Colleges, Schools, Government Office complexes, etc.		

Semester VI

a. Course Name: Working Drawings
b. Course Code: 01101351

c. Course Learning Outcomes:

CO 1	Practice drawings which are prepared for the actual construction/ execution of a building.
CO 2	Prepare execution drawings for a small scale building.
CO 3	Recognize different materials, fixtures and fittings.
CO 4	Analyse the availability and feasibility of construction.

d. Teaching & Examination Scheme:

Teaching Scheme			C	Evaluation Scheme					
				External		Internal			Total
L	T	P		Theory	Practical	Theory	*C.E.	P	
2	2	6	10	-	50	20	30	-	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit

e. Course Content:

Sr.	Topic	Weightage	Teaching Hrs.
1	**: To familiarize the students with the drawings which are prepared for the actual construction/execution of a building:** • Execution drawing systems and methods. (for small scale Building) • Trade literature, detailing methods, architectural working drawing. • Choice of materials, fixtures, fittings, availability and constructional feasibility. • Integration of building systems and services. Like doors, windows, lifts, staircases elevators etc.	%	

***Continuous Evaluation:**

Reference Books:

1. Architectural Working Drawings (Textbook) Ralph W. Liebing; Wiley
2. The Professional Practice of Architectural Working Drawings (Textbook) Osamu A Wakita, M. Linde and Nagy R. Bakhoum; Wiley
3. Working Drawing Handbook (Textbook) Keith Styles and Andrew Bichard; Routledge

a. Course Name: Estimate, Coasting and Specifications-II

b. Course Code: 01101352

c. Course Learning Outcomes:

CLO 1	Explain the quantity and surveying techniques related to any building construction activity.
CLO 2	Prepare general and detailed specification of different building items.
CLO 3	Discuss the meaning, importance, purpose and use of rate analysis.
CLO 4	Develop estimates of different items of work such as compound wall, kitchen, R.C.C. WORK, Bath, WC, wooden item, septic tank, soak pit, etc. Of a small residential building.

d. Teaching & Examination Scheme:

Teaching Scheme			C	Evaluation Scheme					
				External		Internal			Total
L	T	P		Theory	Practical	Theory	*C.E.	P	
2	1	2	5	50	-	20	30	-	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit

e. Course Content:

Sr.	Topic	Weightage	Teaching Hrs.

1	**Understanding Quantity Surveying & Estimate Preparation**:
	• Specification: Specification of different building items - general specification and detailed specification
	• Rate Analysis: Meaning, Importance, Purpose and us e, factors affecting rate analysis. Rate analysis of major items of building work. Factors affecting, cost of work, task work general.
	• Estimates: Method of computing quantities, mode of measurement of all items of work, unit of measurement IS 1200.
	• Compound wall, Small residential building 1 room with verandah, Small residential building with 2 room
	• Slab - One way/Two way. Slab including cantering, shuttering & reinforcement. Steel truss.
	• Material requirement for above items including Brick work ± R.C.C. –
	• Wooden items - doors, windows, Glass.
	• Measurement Book its entry checking and preparation of Bill etc. standard M.B
	  • Over and above the mentioned items, Estimate of Septic Tank, Soak Pit, Sanitary item ± Plumbing, Electrification.
	  • Rate analysis of all major items to be prepared.
		%	

Reference Books:

1. Estimation and Costing (Textbook); M. Chakraborti
2. Estimation and Costing (Textbook); N Dutta; UBS Publishers Distributors Pvt. Ltd.
3. Practical Information for Quantity Surveyors (Textbook) P.T Joglekar; Pune Vidy arthi Griha Prakashan

f. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3	CLO4
1	Specification of different building items - general specification and detailed specification		✓		
2	Meaning, Importance, Purpose and us e, factors affecting rate analysis. Rate analysis of major items of building work. Factors affecting, cost of work, task work general.			✓	
3	Method of computing quantities, mode of measurement of all items of work, unit of measurement IS 1200.	✓			✓
4	Compound wall, Small residential building 1 room with verandah, Small residential building with 2 room				✓
5	One way/Two way. Slab including cantering, shuttering & reinforcement. Steel truss.		✓		

a. Course Name: Building Services & Equipment's-II

b. Course Code: 01101353

c. Course Learning Outcomes:

CLO 1	Explain various advance services in buildings.
CLO 2	Apply electric services such as transformers, sub-station, LT rooms, Power connection, A.C & D.C. conduits, distribution board and fuses, wiring system fixtures.
CLO 3	Design the layout of electrification of any building.
CLO 4	Develop communication system and their layout

d. Teaching & Examination Scheme:

Teaching Scheme			C	Evaluation Scheme					
				External		Internal			Total
L	T	P		Theory	Practical	Theory	*C.E.	P	
1	-	2	3	50	-	20	30	-	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit

e. Course Content:

Sr.	Topic	Weightage	Teaching Hrs.
1	**study advanced Services in Buildings (Electrification, communication systems, air conditioning):** • Types of Air conditioners, components of an Air conditioning system, ducting, layout and design drawings • Air conditioning and mechanical ventilation, importanc e of Air - conditioning, Communication systems (telephone, fax, EPABX etc.) and their layouts and connections Electrical services - Transformers, sub-stations, LT rooms, Power Connection, A.C & D.C, conduits, distribution board and fuses, wiring system (concealed & open) fixtures, design of layout and symbols for representation.	%	

***Continuous Evaluation:**

It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

Reference Books:

1. Building construction illustrated (Textbook) Francis D.K Ching; Wiley (John Wiley & Sons, Inc.)
2. Fundamentals of Building Construction: Materials and Methods (Textbook) Edward Allen and Joseph Iano; Wiley (John Wiley & Sons, Inc.)

a. Course Name: Building Regulations
b. Course Code: 01101354

c. Course Learning Outcomes:

CLO 1	Identify and list the regulations for development control and quality as a means of ensuring minimum standards of building performance and environmental quality.
CLO 2	Apply the need and rationale for development and building control to their own studio projects.
CLO 3	Define various terms such as act, rule, regulation, norms, development plan, Planning authority, FSI, Built-up area, etc.
CLO 4	Sketch the procedure for securing Development permission and documents required.

d. Teaching & Examination Scheme:

Teaching Scheme			C	Evaluation Scheme					
				External		Internal			Total
L	T	P		Theory	Practical	Theory	*C.E.	P	
1	1	-	2	50	-	20	30	-	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit

e. Course Content:

Sr.	Topic	Weightage	Teaching Hrs.
1	**regulations for development control and quality as a means of ensuring minimum standards of building performance and environmental quality**: • Need and rationale for development and building control, prevailing legislation (various Acts) under which Rules and Regulations have been worked out, National Building Code. • Definitions and explanation of various terms like Act, Rules, Regulation, Development Plan, Planning Authority, Local Authority, Built-up Area, Building Unit, FSI / FAR, Plot coverage, Margins, Setbacks, Development permissions, occupancy certificates etc. • General development requirements and regulations in Gamtal and Revenue Survey areas, for Industrial Areas, Low cost Housing and other special structures. • Procedure for securing Development permission and documents required.	%	

***Continuous Evaluation:**
It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

Reference Books:

1. Gujarat Town Planning and Urban Development Act 1976 (Textbook); Government of Gujarat
2. General Development Control Regulations (Textbook); AUDA
3. National Building Code of India (Textbook); Government of India

a. Course Name: Architecture Portfolio & Presentation

b. Course Code: 01101355

c. Course Learning Outcomes:

CLO 1	Illustrate the techniques of presenting academic projects and other work in the form of a portfolio.
CLO 2	Develop the skill of using various techniques of preparing a portfolio by compiling different forms of project data such as drawings, images, models, 3Ds, sketches, briefs, etc. From sources and combining the same into a common format file.
CLO 3	Practice the enhancing method for the visual appearance of the compiled data by suitable composition.
CLO 4	Employ the techniques of using presentation tools and preparing various versions of the portfolio for online display/ hard copy/ Email version, etc.

d. Teaching & Examination Scheme:

Teaching Scheme			C	Evaluation Scheme					
				External		Internal			Total
L	T	P		Theory	Practical	Theory	*C.E.	P	
1	-	2	3	-	50	-	50	-	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit

e. Course Content:

Sr.	Topic	Weightage	Teaching Hrs.
1	**Learn the techniques of presenting academic projects and other work in the form of a portfolio.:** • To learn techniques of preparing a portfolio by compiling various forms of project data such as drawings, images, models, 3Ds, • sketches, briefs, etc. from various sources and combining the same into a common format file. • Enhancing the visual appearance of the compiled data by suitable composition and presentation tools; and preparing various versions of the portfolio for Online display/ Hard copy printing/ E- mail version/ Editable soft copy, etc.	%	

***Continuous Evaluation:**
It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

Reference Books:

1. How to create a portfolio and get hired (Textbook) Fig Taylor; Lawrenc e King Publishing
2. The Architect Portfolio: Planning, Design, Production (Textbook) Andreas Luescher; Routledge

a. **Course Name: Structural Design & Analysis-IV**
b. **Course Code: 01101356**

c. **Course Learning Outcomes:**

CLO 1	Design the concrete structure.
CLO 2	Identify cement and concrete as structural materials.
CLO 3	Practice the application of relevant IS codes.
CLO 4	Design shear reinforcement for any building.

	PO												PSO		
CO	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**
CO1	3		3	2	2			2	2						
CO2	3		2	3				3			3				
CO3	3	3	3	3				2	1						
CO4	3	3	2	3	3			2			2				
Average	3	3	2.50	2.75	2.5			2.25	1.5		2.5				

d. **Teaching & Examination Scheme:**

Teaching Scheme			**C**	**Evaluation Scheme**					
				External		**Internal**			**Total**
L	**T**	**P**		**Theory**	**Practical**	**Theory**	***C.E.**	**P**	
2	1	2	5	50	-	20	30	-	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit

e. **Course Content:**

Sr.	**Topic**	**Weightage**	**Teaching Hrs.**
1	**To study the designing of concrete structure.**: • Study of cement and concrete as a structural material. • Definition of Permissible stresses, balanced section, under reinforced and over-reinforced section. • Design methods of R.C.C. structures: working stress method and limit state method. • Application of relevant IS codes. • Design of simply supported one-way slab, two-way slab & continuous slabs. • Design of singly reinforced and doubly reinforced beams ELL beams T-beams. • Design of shear reinforcements. • Axially and eccentrically loaded columns, types of columns. • Design of axially loaded columns & reinforcement detailing. • Design of isolated footing (square & rectangular). • Concept of Hinge in RCC members.	%	

***Continuous Evaluation:**

It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

Reference Books:

a. Design of R.C.C. Structures (Textbook) N. Subramanian; Ox ford
b. Plain and Reinforced ConcreteVol-1 (Textbook) Jay Krishna; Nem Chand
c. ISCode±456-2000, Code Of Practice For Plain & Reinforce Concrete (Textbook) BIS; New Delhi
d. ISCode-875±1987, Code of Practice for Design Loads (Textbook) BIS; New Delhi
e. S.P.±16Design Aids to IS456 (Textbook) BIS; New Delhi

a. Course Name: Related Study Programs-VI
b. Course Code: 01101357

c. Course Learning Outcomes:

CLO 1	Identify the aspects of execution and construction of a building.
CLO 2	Analyse various concerns related to the execution of a building.
CLO 3	Recognise construction process at various stages/ junctions/ locations.
CLO 4	Practice respective construction techniques through site studies of various construction sites.

d. Teaching & Examination Scheme:

Teaching Scheme			C	Evaluation Scheme					
				External		Internal			Total
L	T	P		Theory	Practical	Theory	*C.E.	P	
-	2	-	2	-	-	-	60	40	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit

e. Course Content:

Sr.	Topic	Weightage	Teaching Hrs.
1	**The aspects of execution and construction of a building.**: Study of various concerns related to the execution of a building construction process at various stages/ junctions/ locations; in case of different materials and respective construction techniques; through site studies of various construction sites.	%	

***Continuous Evaluation:**

It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

f. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3	CLO4
1	The aspects of execution and construction of a building			✓	

Semester VII

u. Course Name: Architecture Design - VI
v. Course Code: 01101401

w. Course Learning Outcomes:

CLO 1	Resolve complex issues into a valid expressions of architectural character contextuality and urban identity through collective design of settlement level Institution/ Housing/ Amenity.
CLO 2	Analyse architecture for the public domain through detailed analysis and study of town or parts and develop individual designs for diverse projects within overall conceptual development for the settlement.
CLO 3	Design resolution for a project in the urban fabric selected within a given town by comprehensive resolution of all aspects of the project like detailed design control mechanism structure and material landscaping etc.

x. Teaching & Examination Scheme:

Teaching Scheme (Hrs./Week)			Credit	Examination Week					Total
				External		Internal			
L	T	P		Theory	Practical	Theory	*C.E.	Practical	
4	**2**	**8**	**14**	**-**	**-**	**20**	**20**	**60**	**100**
L-Lectures; **T**-Tutorial; **P**-Practical; **C.E**.- Continuous Evaluation									

y. Course Content:

Sr. No.	Topic	Weightage	Teaching Hrs.
1.	Resolve complex issues into a valid expression of architectural character, contextuality and urban identity. Architectural for the Public Domain is emphasized through detailed analysis & study of a town/or parts. Design resolution for a project in the urban fabric selected within a given town, with the intention of developing individual designs for diverse projects within on overall conceptual development for the settlement.	%	

***Continuous Evaluation:**
It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

z. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3
1	Resolve complex issues into a valid expression of architectural character, contextuality and urban identity.			✓

a. Course Name: Advanced Building Materials & Construction Technology -VII
b. Course Code: 01101402

c. Course Learning Outcomes:

CLO 1	Understand the building construction requirements and services of multi storeyed buildings and long span structures.
CLO 2	Identify the applications of Building finishes and Internal building components
CLO 3	Assess post-tension and pre-tension structures of concrete & steel

d. Teaching & Examination Scheme:

Teaching Scheme (Hrs./Week)			Credit	Examination Week					Total
				External		Internal			
L	T	P		Theory	Practical	Theory	*C.E.	Practical	
1	**-**	**2**	**3**	**50**	**-**	**20**	**30**	**-**	**100**
L-Lectures; **T**-Tutorial; **P**-Practical; **C.E**.- Continuous Evaluation									

e. Course Content:

Sr.	Topic	Weightage	Teaching Hrs.
1	**Understanding the building construction requirements of multi storeyed buildings:** • Service duct, electrical duct, A.C. duct, lift well, ramp, swimming pools. • Building finishes i.e. internal wall and ceiling, External wall, polishing and Varnishing. • Measures for Earthquake resistance • Internal building components: • Structural glazing, curtain walls	%	

***Continuous Evaluation:**
It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

Reference Books:

1. Building construction illustrated (Textbook) Francis D.K Ching; Wiley
2. Earthquake Resistance Design of Structures (Textbook) B. L Gupta

a. Course Name: Advanced Services
b. Course Code: 01101403

c. Course Learning Outcomes:

CLO 1	Understand advanced building services like HVAC, water supply and disposal, electrification, acoustics and lighting related to complex building situations like high-rise complexes
CLO 2	Identify Integrated energy management along with the Concepts of building management systems & Building Information Modelling
CLO 3	Analyse concerns related to each of their installation, management, maintenance and design.

d. Teaching & Examination Scheme:

Teaching Scheme (Hrs./Week)			Credit	Examination Week					Total
				External		Internal			
L	T	P		Theory	Practical	Theory	*C.E.	Practical	
1	**-**	**1**	**2**	**-**	**50**	**20**	**30**	**-**	**100**
L-Lectures; **T**-Tutorial; **P**-Practical; **C.E**.- Continuous Evaluation									

e. Course Content:

Sr.	Topic	Weightage	Teaching Hrs.
1	**To study advanced service s in buildings; and concerns related to each of their installation, management, maintenance and design**: disposal, electrification, acoustics and lighting related to complex building situations like high-rise complexes, cities, etc.	%	

***Continuous Evaluation:**
It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

Reference Books:

a. Building Services Handbook (Textbook) Roger Greeno and Fred Hall; Routledge
b. Building Services, Technology and Design (Textbook) Roger Greeno; Longman
c. Building Services Design Management (Textbook) Jackie Portman; Wiley-Blackwell
d. Architectural Acoustics: Principles and Practice (Textbook); William J. Cavanaugh and Gregory C. Tocci; Wiley (John Wiley & Sons, Inc.)
e. Architectural Lighting (Textbook); M. David Egan and Victor W. Olgyay; McGraw-Hill Higher Education

a. Course Name: Advanced Structural Design & Systems

b. Course Code: 01101404

c. Course Learning Outcomes:

CLO 1	Design and understand execution of complex building structures and advanced structural systems like cable structures, membrane structures, pneumatic structures, folded plates, pre-stressed concrete, space frames, etc
CLO 2	Analyse and design structural systems of Tall buildings & long span Structures
CLO 3	Comprehend assessment of the failures in such structural systems.

d. Teaching & Examination Scheme:

Teaching Scheme (Hrs./Week)			Credit	Examination Week					Total
				External		Internal			
L	T	P		Theory	Practical	Theory	*C.E.	Practical	
1	**1**	**1**	**3**	**50**	**-**	**20**	**30**	**-**	**100**
L-Lectures; **T**-Tutorial; **P**-Practical; **C.E**.- Continuous Evaluation									

e. Course Content:

Sr.	Topic	Weightage	Teaching Hrs.
1	**Study the design and execution techniques of complex building structure s and advanced structural systems.**: • Design and construction techniques of arches, vaults, domes, • Structural systems like cable structures, membrane structures, pneumatic structures, folded plates, pre stressed concrete, space frames, etc.	%	

***Continuous Evaluation:**

It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

Reference Books:

1. The Tectonics of Structural Systems: An Architectural Approach (Textbook) Yonca Hurol; Routledge
2. Structures and Architecture (Textbook) Paulo J. Da Souza Cruz (Editor); CRC Press
3. Beyond the Cube: The Architecture of Space Frames and Polyhedra (Textbook) J. Francois Gabriel (Editor); Wiley (John Wiley & Sons, Inc.)
4. Form and Forces: Designing efficient, expressive structures (Textbook) Edward Allen and Waclaw Zalewski; Wiley (John Wiley & Sons, Inc.)
5. Membrane Design and Structures in the World (Textbook) Kazuo Ishi

a. Course Name: Thesis Orientation - I
b. Course Code: 01101405
c. Course Learning Outcomes:

CLO 1	Understand the methodological approach to carry out a research-based programme in order to design an architectural project involving a set of complex issues.
CLO 2	Comprehend the Nature and function of research, meaning of research in the field of architectural design
CLO 3	Enhance Writing and presentation skills.

d. Teaching & Examination Scheme:

Teaching Scheme (Hrs./Week)			Credit	Examination Week					Total
				External		Internal			
L	T	P		Theory	Practical	Theory	*C.E.	Practical	
-	**-**	**2**	**2**	**-**	**-**	**-**	**50**	**50**	**100**
L-Lectures; **T**-Tutorial; **P**-Practical; **C.E**.- Continuous Evaluation									

e. Course Content:

Sr.	Topic	Weightage	Teaching Hrs.
1	• Nature and function of research, scientific research, meaning of research in the field of architectural design. Pure and applied research. • Stages of research and design; design and research methodology • Techniques of data collection • Forms of research reporting, structure of a report • Writing skills, presentation aids	%	

***Continuous Evaluation:**
It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

References:

1. 'A Conversation (Framing a Stage): A process of an architectural thesis project' by Damir Vukovljak; VDM Verlag Dr. Muller
2. 'Architectural Research' by James C. Snyder; Van Nostrand Reinhold Company
3. 'Architectural Research Methods' by Linda N. Groat and David Wang; Wiley

f. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3
	Nature and function of research, scientific research, meaning of research in the field of architectural design. Pure and applied research.	✓	✓	

	Stages of research and design; design and research methodology	✓		
	Techniques of data collection			
	Forms of research reporting, structure of a report		✓	
	Writing skills, presentation aids			✓

a. Course Name: Art and Architecture
b. Course Code: 01101430

c. Course Learning Outcomes:

CLO 1	Explore the inter-relationship of art and architecture through the study of global art history.
CLO 2	Analyse the works of different artists and architects that reflect the inter-relationship.
CLO 3	Analyse the application of different art forms in architecture

Teaching & Examination Scheme:

Teaching Scheme (Hrs./Week)			Credit	Examination Week					Total
				External		Internal			
L	T	P		Theory	Practical	Theory	*C.E.	Practical	
-	**-**	**-**	**3**	**-**	**-**	**20**	**20**	**60**	**100**
L-Lectures; **T**-Tutorial; **P**-Practical; **C.E**.- Continuous Evaluation									

d. Course Content:

Sr.	Topic	Weightage	Teaching Hrs.
	To explore the inter-relationship of art and architecture through the study of global art history.: • Role of art in history of world architecture • Symbiotic relationship of art and architecture • Application of different art forms in architecture Works of different artists and architects that reflect the inter-relationship		

***Continuous Evaluation:**
It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

References:

1. 'Modern Architecture since 1900' by William J. R. Curtis; Phaidon Press
2. 'The 20th Century Artbook' by Susannah Lawson; Phaidon Press

e. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3
	To explore the inter-relationship of art and architecture through the study of global art history.	✓		

a. Course Name: Visual Communication
b. Course Code: 01101431
c. Course Learning Outcomes:

CLO 1	Understand fundamental aspects of visual communication in architecture by learning the aspects of visual communication
CLO 2	Assess wayfinding in architecture and spaces between built environment.
CLO 3	Summarize the significance and role of visual communication in architecture, built forms and environment

d. Teaching & Examination Scheme:

Teaching Scheme (Hrs./Week)			Credit	Examination Week					Total
				External		Internal			
L	T	P		Theory	Practical	Theory	*C.E.	Practical	
-	**-**	**-**	**3**	**-**	**-**	**20**	**20**	**60**	**100**
L-Lectures; **T**-Tutorial; **P**-Practical; **C.E**.- Continuous Evaluation									

e. Course Content:

Sr.	Topic	Weightage	Teaching Hrs.
1	To study the significance and role of visual communication in architecture: • Aspects of visual communication in architecture, built forms and environment. • Way finding in architecture and spaces between built environment.	%	

***Continuous Evaluation:**
It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

References:

1. 'An Introduction to Visual communication: From Cave Art to Second Life' by Susan B. Barnes; Peter Long Publishing
2. 'Visual Communication: From Theory to Practice' by Lucienne Roberts, Jonathan Baldwin; AVA Publishing
3. 'Visual Communication: Images with Messages' by Paul Martin Lester; Wadsworth Publishing

f. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3
	To study the significance and role of visual communication in architecture	✓		

a. Course Name: Architectural Journalism
b. Course Code: 01101432
c. Course Learning Outcomes:

CLO 1	Recognize techniques of writing on Architecture and allied subjects, with a journalist perspective
CLO 2	Assess and analyse recent historical and contemporary examples of journalistic criticism of architecture.
CLO 3	Analyse writings by Indian and overseas critics, discursive techniques, major critical themes and thematic categories in architectural writing over the past three centuries.

d. Teaching & Examination Scheme:

Teaching Scheme (Hrs./Week)			Credit	Examination Week					Total
				External		Internal			
L	T	P		Theory	Practical	Theory	*C.E.	Practical	
-	**-**	**-**	**3**	**-**	**-**	**20**	**20**	**60**	**100**
L-Lectures; **T**-Tutorial; **P**-Practical; **C.E**.- Continuous Evaluation									

e. Course Content:

Sr.	Topic	Weightage	Teaching Hrs.
1	**To study the techniques of writing on Architecture and allied subjects, with a journalist perspective:** Analysis of recent historical and contemporary examples of written and journalistic criticism of architecture • Study of selected writings by Indian and overseas critics • Study of discursive techniques • Study of major critical themes and thematic categories in architectural writing over the past three centuries.	%	

***Continuous Evaluation:**

It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

References:

1. 'Architecture and the Journalism of Ideas' by Bender
2. 'Architectural criticism and Journalism' by Mohammad al-Asad and Majd Musa

f. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3
	To study the techniques of writing on Architecture and allied subjects, with a journalist perspective.	✓		

a. Course Name: Theatre/Film Set Design

b. Course Code: 01101433

c. Course Learning Outcomes:

CLO 1	Understand the role of Theatre and film making by studying the fundamentals of visualised spaces for Theatre/Lecture/Drama/Dance/Other performances.
CLO 2	Create a make-believe environment and establish intimacy between the performers and the audience in relation to the theatre and cinema halls.
CLO 3	Assess technical aspects like sound, light and colour scheme related to set design.

d. Teaching & Examination Scheme:

Teaching Scheme (Hrs./Week)			Credit	Examination Week					Total
				External		Internal			
L	T	P		Theory	Practical	Theory	*C.E.	Practical	
-	**-**	**-**	**3**	**-**	**-**	**20**	**20**	**60**	**100**
L-Lectures; **T**-Tutorial; **P**-Practical; **C.E**.- Continuous Evaluation									

e. Course Content:

Sr.	Topic	Weightage	Teaching Hrs.
1	**To understand the role of a Set in films and theatres and to study the fundamentals of theme based set de sign**: • History of set and backdrop design for performance • Theme Based Design Strategies and Technology Applications. Creating a make believe environment and to establish • intimacy between the performers and the audience in relation to the theatre and cinema halls. • Technical aspects like sound, light and colour scheme.	%	

***Continuous Evaluation:**
It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

References:

1. 'Stage Design: A Practical Guide' by Gary Thorne
2. 'Theatre Design: Behind the scenes with the Top Set, Lighting and Costume Designers by Babak A. Ebrahimian

f. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3
	To understand the role of a Set in films and theatres and to study the fundamentals of theme based set de sign	✓		

Semester VII
Semester Internship

SUBJECT: OFFICE TRAINING

Subject Code: 01101451

Focus: To make students aware of and to inculcate a sense of appreciation in all the operations that take place- right from the preliminary sketch design to the completion of the project.

Content:

- The students must complete a minimum of sixteen weeks of training in a registered architectural practice firm. They are required to participate in each activity of the organization for a minimum period of one week.
- Maintaining a weekly report file and recording their activities during training period in detail.
- The student is also expected to do case study of one project that he is associated with, during his training period. This study should include a complete documentation and analysis of the architectural / structural and constructional aspects of the project. Details which are deemed confidential by the firm should not be included in the study report, which must be submitted along with the Weekly Report File.
- A student is expected to work on preparation of Municipal drawings, basic knowledge about documentation, tender work, marking of layout on site, sanitary fittings, office administration etc.

Semester IX

aa. Course Name: Architecture Design - VII
bb. Course Code: 01101501
cc. Course Learning Outcomes:

CLO 1	Define and Design Urban Space/Urban Fabric which is sensitive to the needs of disabled, aged people and children having: • Public access to majority of the space • Large-gathering areas, which are open and extendable to the immediate urban context.
CLO 2	Analyse structural feasibility of the project and adopt various structural systems for spanning.
CLO 3	Differentiate between urban designs as opposed to urban development and understand the role of architecture in shaping urban fabric.
CLO 4	Define the needs of privacy, community spaces, efficiency of open spaces and idea of extended living areas.
CLO 5	Design energy efficient buildings through sustainable architecture.

dd. Teaching & Examination Scheme:

Teaching Scheme (Hrs./Week)			Credit	Examination Week					Total
				External		Internal			
L	T	P		Theory	Practical	Theory	*C.E.	Practical	
2	**10**	**4**	**16**	**-**	**-**	**20**	**60**	**20**	**100**
L-Lectures; **T**-Tutorial; **P**-Practical; **C.E**.- Continuous Evaluation									

ee. Course Content:

Sr. No.	Topic	Weightage	Teaching Hrs.
1.	• Studio projects shall be based on considering the principals involved in community architecture. • Concepts of sustainable architecture and energy efficient buildings reuse recycled and recharging resources such as water, solar bio-resources; can be introduced in the studio design. The design can also be sensitive to the needs of disabled, aged people and children. o Multiple functions o Public access to majority of the space o Large-gathering areas, which are open and extendable to the immediate urban context o Analysing structural feasibility of the project to adopt various structural systems for spanning. • High-rise building Projects like transport interchanges, large retail areas with entertainment areas, transport terminals with commercial areas, performing art centre with museums and such multiple functions shall be taken.	%	

References:

1. ‘Urban Design: A Typology of Procedures and Products’, by Jon Lang; Architectural Press – An imprint of Elsevier
2. ‘Urban Design: Method and Techniques’ by Cliff Moughtin, Rafael Cuesta, Christine Sarris and Paola Signoretta; Architectural Press – An imprint of Butterworth-Heinemann
3. By the City, For the City: An Atlas of Possibility for the Future of New York by The Institute for Urban Design; Multi-Story Books
4. Pocket Neighbourhoods: Creating Small-Scale Community in a Large-Scale World by Ross Chapin Taunton Press

a. Course Name: Thesis Orientation-II
b. Course Code: 01101502

c. Course Learning Outcomes:

CLO 1	Understand the methodological approach to carry out a research-based programme in order to design an architectural project involving a set of complex issues.
CLO 2	Comprehend the Nature and function of research, meaning of research in the field of architectural design along with enhancement of Writing and presentation skills.
CLO 3	Structure an undergraduate thesis and its other requirements.

a. Teaching & Examination Scheme:

Teaching Scheme (Hrs./Week)			Credit	Examination Week					Total
				External		Internal			
L	T	P		Theory	Practical	Theory	*C.E.	Practical	
2	**2**	**6**	**10**	**-**	**30**	**-**	**-**	**50**	**100**
L-Lectures; **T**-Tutorial; **P**-Practical; **C.E.**- Continuous Evaluation									

b. Course Content:

Sr.	Topic	Weightage	Teaching Hrs.
1	To understand the methodological approach to carry out a research based programme in order to design an architectural project involving a set of complex issue s.: • Nature and function of research, scientific research, meaning of research in the field of architectural design. Pure and applied research. • Stages of research and design; design and research methodology • Techniques of data collection • Forms of research reporting, structure of a report • Writing skills, presentation aids • Use of primary and secondary references, bibliography, notations, cross reference etc. • Nature of an undergraduate thesis, its structure and other requirements.	%	

***Continuous Evaluation:**
It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

References:

1. 'Urban Design: A Typology of Procedures and Products', by Jon Lang; Architectural Press – An imprint of Elsevier
2. 'Urban Design: Method and Techniques' by Cliff Moughtin, Rafael Cuesta, Christine Sarris and Paola Signoretta; Architectural Press – An imprint of Butterworth-Heinemann

3. By the City, For the City: An Atlas of Possibility for the Future of New York by The Institute for Urban Design; Multi-Story Books
4. Pocket Neighbourhoods: Creating Small-Scale Community in a Large-Scale World by Ross Chapin Taunton Press

c. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3
1.	To understand the methodological approach to carry out a research-based programme in order to design an architectural project involving a set of complex issues.	✓		

a. Course Name: Research Methodology

b. Course Code: 01101503

c. Course Learning Outcomes:

CLO 1	Define the research process in Architecture by learning about the Stages of a Research
CLO 2	Outline a thesis Report by Selection of a Topic, Literature survey, Reference collection, etc.
CLO 3	Apply the theoretical knowledge in small research projects and be confident to publish their research reports in journals.

d. Teaching & Examination Scheme:

Teaching Scheme (Hrs./Week)			Credit	Examination Week					Total
				External		Internal			
L	T	P		Theory	Practical	Theory	*C.E.	Practical	
2	**1**	**2**	**5**	**50**	**-**	**20**	**30**	**-**	**100**
L-Lectures; **T**-Tutorial; **P**-Practical; **C.E**.- Continuous Evaluation									

e. Course Content:

Sr.	Topic	Weightage	Teaching Hrs.
1	**To study the detailed aspects of research process in Architecture.**: • Meaning, objectives, types and approaches of research • Significance of research • Research Methods V/S Methodology • Stages of a 'Research' • Selection of a Topic • Identification of a Topic based on a problem/issue/need/concern/phenomenon • Literature survey • Internet as a source of information • Reference e collection • Current Status • Hypothesis – formulation • Mode of Approach • Research Design • Art of writing a thesis • Outline of a Report	%	

References:

1. 'A Conversation (Framing a Stage): A process of an architectural thesis project' by Damir Vukovljak; VDM Verlag Dr. Muller
2. 'Architectural Research' by James C. Snyder; Van Nostrand Reinhold Company
3. 'Architectural Research Methods' by Linda N. Groat and David Wang; Wiley

a. Course Name: Architectural Conservation
b. Course Code: 01101481
c. Course Learning Outcomes:

CLO 1	Define fundamentals of architectural conservation and relevant aspects
CLO 2	Understand History and theory of conservation
CLO 3	· Identify the Role of INTACH/UNESCO/ICOMOS and other organizations in conservation of heritage.

d. Teaching & Examination Scheme:

Teaching Scheme (Hrs./Week)			Credit	Examination Week					Total
				External		Internal			
L	T	P		Theory	Practical	Theory	*C.E.	Practical	
-	**-**	**-**	**5**	**-**	**-**	**20**	**20**	**60**	**100**
L-Lectures; **T**-Tutorial; **P**-Practical; **C.E**.- Continuous Evaluation									

e. Course Content:

Sr.	Topic	Weightage	Teaching Hrs.
1	**To study the fundamentals of architectural conservation and relevant aspects**: • History and theory of conservation • Philosophy of conservation • Values and ethics • Cultural heritage • Conservation methods • Management of Historic sites • Studies of various charters • Role of INTACH/UNESCO/ICOMOS and other organizations in conservation of heritage	%	

***Continuous Evaluation:**
It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

References:

5. 'Urban Design: A Typology of Procedures and Products', by Jon Lang; Architectural Press – An imprint of Elsevier
6. 'Urban Design: Method and Techniques' by Cliff Moughtin, Rafael Cuesta, Christine Sarris and Paola Signoretta; Architectural Press – An imprint of Butterworth-Heinemann
7. By the City, For the City: An Atlas of Possibility for the Future of New York by The Institute for Urban Design; Multi-Story Books
8. Pocket Neighbourhoods: Creating Small-Scale Community in a Large-Scale World by Ross Chapin Taunton Press

f. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3
1.	To study the fundamentals of architectural conservation and relevant aspects.	✓		

a. Course Name: Construction Management
b. Course Code: 01101482
c. Course Learning Outcomes:

CLO 1	Understand the fundamentals of construction management with Objectives and functions.
CLO 2	Work with the Management tools, PERT, CPM
CLO 3	Define Line of Balance, Inspection, Quality controls and Safety in construction.

d. Teaching & Examination Scheme:

Teaching Scheme (Hrs./Week)			Credit	Examination Week					Total
				External		Internal			
L	T	P		Theory	Practical	Theory	*C.E.	Practical	
-	**-**	**-**	**-**	**-**	**-**	**20**	**20**	**60**	**100**
L-Lectures; **T**-Tutorial; **P**-Practical; **C.E**.- Continuous Evaluation									

e. Course Content:

Sr.	Topic	Weightage	Teaching Hrs.
1	**To study the fundamentals of construction management**: • Objectives and functions, • Management tools, PERT, CPM, other scientific methods • Line of Balance • Inspection and Quality controls • Safety in construction	%	

***Continuous Evaluation:**
It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

References:

1. 'Construction Project Management: Theory and Practice' by Kumar Neeraj Jha; Pearson Education
2. 'Essentials of Construction Project Management' by Thomas E. Uher and Martin Loosemore; UNSW Press

f. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3
	To Study the fundamentals of construction management.	✓		

a. Course Name: Environmental Studies
b. Course Code: 01101483
c. Course Learning Outcomes:

CLO 1	Identify the environmental parameters affecting human habitat
CLO 2	Identify Environmental factors affecting human habitat such as climate, environment pollutions, environmental degradation, green cover
CLO 3	Explore environmental parameters and factors at micro and macro scales

d. Teaching & Examination Scheme:

Teaching Scheme (Hrs./Week)			Credit	Examination Week					Total
				External		Internal			
L	T	P		Theory	Practical	Theory	*C.E.	Practical	
-	**-**	**-**	**5**	**-**	**-**	**20**	**20**	**60**	**100**
L-Lectures; **T**-Tutorial; **P**-Practical; **C.E**.- Continuous Evaluation									

e. Course Content:

Sr.	Topic	Weightage	Teaching Hrs.
1	**To study the environmental parameters affecting human habitat**: Environmental factors affecting human habitat such as climate, environment pollutions, environmental degradation, green cover, etc. at micro and macro scales.	%	

***Continuous Evaluation:**
It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

References:

1. 'Textbook of Environmental Studies for Undergraduate Courses' by Erach Bharucha; Universities press
2. 'The Environmental Tradition: Studies in Architecture of Environment' by Dean Hawkes; Routledge

f. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3
	To study the environmental parameters affecting human habitat.		✓	

a. Course Name: Sustainable Architecture
b. Course Code: 01101484
c. Course Learning Outcomes:

CLO 1	Define the fundamentals of sustainable architecture
CLO 2	Identify Ecological balance, conservation of natural resources, Solar passive architecture, Recycling and Upcycling techniques.
CLO 3	Sustainability-Principles and methods of Energy conscious design.

d. Teaching & Examination Scheme:

Teaching Scheme (Hrs./Week)			Credit	Examination Week					Total
				External		Internal			
L	T	P		Theory	Practical	Theory	*C.E.	Practical	
-	**-**	**-**	**5**	**-**	**-**	**20**	**20**	**60**	**100**
L-Lectures; **T**-Tutorial; **P**-Practical; **C.E**.- Continuous Evaluation									

e. Course Content:

Sr.	Topic	Weightage	Teaching Hrs.
	To study the fundamentals of Sustainable architecture: Sustanability-principles and methods of Energy conscious design. Ecological balance, conservation of natural resources Solar passive architecetue Recycling	%	

***Continuous Evaluation:**
It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

References:

1. 'Passive Solar Architecture: Heating, Cooling, Ventilation, Day lighting and More – using Natural flows' by David Bainbridge and Ken Haggar; Chelsea Green Publishing
2. 'Greening Asia – Emerging Principles for Sustainable Architecture' by Nirmal Kishnani; ORO Editions/FuturArc

f. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3
	To study the fundamentals of sustainable architecture			✓

a. Course Name: Urban Ecology
b. Course Code: 01101485
c. Course Learning Outcomes:

CLO 1	Identify the techniques of sustaining the ecology in an urban context, Urban Ecosystem and its key issues like Management of Urban Ecology.
CLO 2	Conserve site ecology through design
CLO 3	understand the Concept of sustainable design in an urban context through Eco-friendly techniques.

d. Teaching & Examination Scheme:

Teaching Scheme (Hrs./Week)			Credit	Examination Week					Total
				External		Internal			
L	T	P		Theory	Practical	Theory	*C.E.	Practical	
-	**-**	**-**	**5**	**-**	**-**	**20**	**20**	**60**	**100**
L-Lectures; **T**-Tutorial; **P**-Practical; **C.E**.- Continuous Evaluation									

e. Course Content:

Sr.	Topic	Weightage	Teaching Hrs.
1	**To study techniques of sustaining the ecology in an urban context**: • Urban Ecosystem and its key issues • Management of Urban Ecology • Conserving site ecology through design • Concept of sustainable design in an urban context • Environment management through Eco -friendly techniques	%	

***Continuous Evaluation:**
It consists of Assignments/Seminars/Presentations/Quizzes/Surprise Tests (Summative/MCQ) etc.

References:

1. 'Urban Ecology: Patterns, Processes, and Applications- by Jari Niemela and others; Oxford University Press
2. 'Urban Ecology: An Introduction' by Ian Douglas and Philip James; Routledge

f. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3
	To study the techniques of sustaining the ecology in an urban context.	✓		

Semester X

a. Course Name: Thesis (Project)
b. Course Code: 01101551

c. Course Learning Outcomes:

CLO 1	Synthesize all that is learnt in the previous semester, conduct investigative research through library and other resources, and coordinate all pertinent architectural issues with the design concept and objective to reach a viable solution for the resolution of the selected problem.
CLO 2	Develop theme-based research on architectural projects involving collection and analysis of relevant data presented as an analytical report. Analyse and collect the data for the chosen
CLO 3	An in-depth investigation into the aspects of the chosen area Preparation of detailed programme and Design/Research on basis of studies carried out previously.

d. Teaching & Examination Scheme:

Teaching Scheme				Examination Scheme					
				External		Internal			Total
L	T	P	C	Theory	p	Theory	C.E	P	
2	6	12	20			40		60	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

e. Course Content:

Sr. No.	Content	Weightage	Teaching Hours
1.	**Design or Theme based Research:** The Thesis is intended to evaluate the student's capacity and maturity in the field of Architecture. **Study in the chosen field to be carried out in two stages:** **A) Data collection & analysis** • An in-depth investigation into the aspects of the chosen area. • Analysis of data, inferences to establish underlying principles. • Reviews of existing practices / theory in view of current contexts. **B) Design / Research** • Prepare detailed programme • Design or Research on basis of studies carried out in Part A.		

f. Mapping of Experiment List with Course Learning Outcomes:

Sr. No.	Experiment List	CLO1	CLO2	CLO3
1	Workshop			
2	Site visit		✓	
3			✓	

a. Course Name: Design Seminar & Publication
b. Course Code: 01101552

c. Course Learning Outcomes:

CLO 1	Demonstrate basic knowledge of the history of publishing, including print, digital, and other media. Assess the quality and fit of submissions in a range of genres for publication in a variety of media. Employ editing skills - developmental, line, and copy - to improve submissions at the levels of both form and content
CLO 2	Deliver a seminar (inclusive of presentation, debate, participatory discussion) on any of the Architectural/ social/ cultural issues pertaining to community planning/ urban planning or urban design or rural planning/ design based on the theme/ topic chosen for the seminar.
CLO 3	Write, edit, and design print and online media for a range of entities in the arts industry.

d. Teaching & Examination Scheme:

Teaching Scheme				Examination Scheme					
				External		Internal			Total
L	**T**	**P**	**C**	**Theory**	**p**	**Theory**	**C.E**	**P**	
2	**-**	**2**	**4**	**-**	**50**	**-**	**30**	**20**	**100**

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

e. Course Content:

Sr. No.	Content	Weightage	Teaching Hours
1.	**techniques of delivering a seminar (inclusive of presentation,** **debate, participatory discussion):** • Deliver a seminar on any of the Architectural/ social/ cultural issues pertaining to community planning/ urban planning or urban design or rural planning/ design based on the theme/ topic chosen for the seminar.		
2.	**learn the art of writing in Architecture.:** Write a paper on the same topic chosen for the seminar.		

f. Mapping of Experiment List with Course Learning Outcomes:

Sr. No.	Experiment List	CLO1	CLO2	CLO3
1	**Workshop** Write a paper on the same topic chosen for the seminar.	✓	✓	✓

a. **Course Name:** Professional Practice
b. **Course Code:** 01101553
c. **Course Learning Outcomes:**

CLO 1	Identify Architecture as a profession and explore their role, responsibilities and liabilities as an Architect with respect to client and society.
CLO 2	Identify different professional bodies important to the field of architecture their Duties, powers and functions.
CLO 3	Perform their duties as an architect or person working in the allied fields by knowing about the Professional work and scale of fees, mode of working and payments, phasing of projects, etc. Take part in Architectural Competitions

d. **Teaching & Examination Scheme:**

Teaching Scheme				Examination Scheme					
L	T	P	C	External		Internal			Total
				Theory	p	Theory	C.E	P	
2	2	6	10	-	50	-		50	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

g. **Course Content:**

Sr. No.	Content	Weightage	Teaching Hours
1	• Role of an architect, responsibilities and liabilities with respect to client and society. Duties, powers and functions. • Architects Act 1972- aims, objectives, provisions for registration with Council of Architecture. Rules and regulations under the Act, Indian Institute of Architects and its role. • Professional work and scale of fees, mode of working and payments, phasing of projects etc. • Architectural Competitions- need, procedures for conducting, rules and regulations etc. Arbitration - settling of disputes through arbitration, the Arbitration Act, procedures and method of working. • Role of an architect as an Arbitrator. • Valuation of properties - land and buildings, role of architects as approved valuers. • Methods & Techniques for valuation. • Tendering, contracts and articles of agreement, execution of contract, appointment of clerk of works, site supervisor, contractor and subcontractor etc. • Office Management: Types of firms and legal implications, Accounts and Finance, procedures for loans, Maintaining office records. Office personnel and legal provisions regarding employees of small firms. Settling problems and disputes arising out of contract conditions extra items variation in work quality, insurance and compensation of workers etc.		

h. **Text Book and Reference Book:**

1. 'Professional Practice' by Roshan Namawati; Lakhani Book Depot
2. 'Handbook of Professional Documents' Council of Architecture

i. **Mapping of Experiment List with Course Learning Outcomes:**

Sr. No.	Experiment List	CLO1	CLO2	CLO3
1.	Workshop	✓	✓	✓
2.	Site Visit	✓	✓	✓

a. Course Name: Housing
b. Course Code: 01101580

c. Course Learning Outcomes:

CLO 1	Assess the Current aspects of housing in India by doing Housing survey and learning about its methodology.
CLO 2	Significance of housing in the context of both global and national scenario, and would have understood the critical, social and economic issues related to housing especially in developing countries like India.
CLO 3	Analyze how knowledge and skills related to living environments affect the well being of individuals, families and society.

d. Teaching & Examination Scheme:

Teaching Scheme				Examination Scheme					
L	T	P	C	External		Internal			Total
				Theory	p	Theory	C.E	P	
2	2	2	6	-	-	20	20	60	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

e. Course Content:

Sr. No.	Content	Weightage	Teaching Hours
1	**The techniques of assessing the housing scenario & current aspects of housing in India:** • Housing survey and methodologies • Factor affecting housing • Housing demand, Policies, slums, typologies, finance, Agencies, etc • Housing case studies • Post occupancy evaluation		

f. Text Book and Reference Book:

1. 'Housing and Urbanisation: Building ideas for people and cities' by Charles Correa; Thames and Hudson
2. 'Urban Development and Housing in India – 1974 to 2007' by Rishi Muni Dwivedi; New Century Publications
3. 'Housing and Urbanisation: A Study of India' by Cedric Pugh; SAGE Publications

a. Course Name: Urban Design

b. Course Code: 01101581

c. Course Learning Outcomes:

CLO 1	Define the fundamentals of 'Urban design' by learning about the determinants of urban form and understand the fundamental concepts and theories of urban design and their application in design projects.
CLO 2	Demonstrate skills in developing the human environment with consideration of relationships between people and buildings and space.
CLO 3	Demonstrate readiness to start research work in the areas of urban design.

d. Teaching & Examination Scheme:

Teaching Scheme				Examination Scheme					
L	T	P	C	External		Internal			Total
				Theory	p	Theory	C.E	P	
2	2	2	6	-	-	20	20	60	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

e. Course Content:

Sr. No.	Content	Weightage	Teaching Hours
1.	**study the fundamentals of 'Urban de sign'.:** • History of Urban design • Determinants of urban form • Urban design vocabulary • Imagability concepts, design principles, aesthetic, legislation, case studies		

f. Text Book and Reference Book:

1. 'Fundamentals of Urban Design' by Richard Hedman; APA Planners Press
2. 'Urban Design: Method and Techniques' by Rafael Cuesta and Christine Sarris; Routledge

a. Course Name: Interior Design -I
b. Course Code: 01101582

c. Course Learning Outcomes:

CLO 1	Identify various aspects related to interior design by learning about the History and principles of Interior design.
CLO 2	Design Built-in and movable furniture, Interior fittings and furnishings.
CLO 3	Outline Building services related to interiors.

d. Teaching & Examination Scheme:

Teaching Scheme				Examination Scheme					
L	T	P	C	External		Internal			Total
				Theory	p	Theory	C.E	P	
2	6	12	20			40		60	100

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

e. Course Content:

Sr. No.	Content	Weightage	Teaching Hours
1.	History and principles of Interior design		
2	Built-in and movable furniture		
3	Interior fittings and furnishings		
4	Colour, form, texture and lightning in interiors		
5	Materials used in interiors		
6	Building services related to interiors		

f. Text Book and Reference Book:

6. 'Fundamentals of Interior Design' by Simon Dodsworth with Stephen Anderson; Bloombury
7. 'Interior Design Illustrated' by Francis D.K Ching and Corky Binggeli; Wiley

g. Mapping of Experiment List with Course Learning Outcomes:

Sr. NO.	Experiment List	CLO1	CLO2	CLO3
1	History and principles of Interior design			
2	Built-in and movable furniture		✓	
3	Interior fittings and furnishings		✓	
4	Colour, form, texture and lightning in interiors			✓
5	Materials used in interiors			✓
6	Building services related to interiors			✓

a. Course Name: Urban Planning
b. Course Code: 01101583

c. Course Learning Outcomes:

CLO 1	Understand the fundamentals of urban planning along with prevailing planning policies and schemes.
CLO 2	Understand the Evolution of settlement design • Classification of settlements • Planning methodologies • Contribution of prominent Planners
CLO 3	Conceptualise, formulate, structure and evaluate projects, in multi stakeholder contexts, for urban development.

d. Teaching & Examination Scheme:

Teaching Scheme				Examination Scheme					
				External		Internal			
L	**T**	**P**	**C**	**Theory**	**p**	**Theory**	**C.E**	**P**	**Total**
2	**2**	**2**	**6**	**-**	**-**	**20**	**20**	**60**	**100**

L- Lectures; **T**- Tutorial; **P-** Practical; **C**- Credit; **MSE-** Mid-Semester Evaluation, **CE**- Continuous Evaluation, **ESE-** End Semester Examination

e. Course Content:

Sr. No.	Content	Weightage	Teaching Hours
1.	**Study the fundamentals of urban planning along with prevailing planning policies and schemes.:** • Evolution of settlement design • Classification of settlements • Planning methodologies • Contribution of prominent Planners • Urban planning policies • Urban renewal schemes and methodologies		

f. Text Book and Reference Book:

1. 'Cities of Tomorrow: An Intellectual History of Urban Planning and Design Since 1880', by Peter Hall; Wiley-Blackwell
2. 'The Oxford Handbook of Urban Planning' by Rachel Weber and Randall Crane; Oxford University Press