DEPARTMENT OF ARCHITECTURE

ANNA UNIVERSITY, CHENNAI

VISION OF DEPARTMENT OF ARCHITECTURE

The Department of Architecture is committed to excellence in the field of architectural education and the discipline of architecture through its pedagogical, research, extension and outreach activities, directed towards the betterment of the world that we inhabit, in all realms shaped by architecture. It shall uphold universal moral and ethical values in all endeavours that it undertakes and be exemplary in creating positive transformations.

MISSION OF DEPARTMENT OF ARCHITECTURE

The Mission of the Department of Architecture is

- To tap and strengthen the innate potential of each student and deepen their knowledge/skills in order to enable them to self-actualise as well as become catalysts for positive change.
- To contribute to immediate context, larger society and the world through knowledge creation and dissemination.
- To engage and extend the expertise of the department in addressing and solving of issues/problems related to the built environment.
- To actively interact and collaborate with professionals, educational institutions and other related organisations at all scales in order to collectively further the cause of appropriate architecture.

ANNA UNIVERSITY: : CHENNAI - 600 025
UNIVERSITY DEPARTMENTS

REGULATIONS 2023

CHOICE BASED CREDIT SYSTEM

M. Arch (General) Full-Time Programme

1. PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

I. Increase competency as an architect with ability to discern problems and identify solutions through both deep and broad parameters.
II. Find gainful employment in architectural firms/ building sector through offering of specialised knowledge.
III. Be a part of organisations that influence policy and decision making through contributing in- depth knowledge in relevant fields of study.
IV. Become a teacher/ researcher with ability to apply critical, investigative and analytical thinking towards future society.
V. Become a thinker and entrepreneur who can anticipate and project future transformations in the built environment.

2. PROGRAMME OUTCOMES (POs)

After going through two years of study, our M. Arch (General) Graduates will exhibit ability to:

PO# Programme Outcome

1. Independently carry out research / investigation and design development work to solve practical problems of built environment.
2. Write and present a substantial technical report/ research document.
3. Intensify thoughts, techniques and knowledge with a demonstration of mastery in specific areas of architecture.
4 Resolve architectural problems with due consideration to environmental issues.
5 Look at the larger urban cultural and social context in the making of design decisions.
6 Bring contemporary tools/ methods/ approaches to analyse situations and explore design.

PEO / PO Mapping:

PROGRAMME EDUCATIONAL OBJECTIVES	PROGRAMME OUTCOMES					
	PO1	PO2	PO3	PO4	PO5	PO6
I	1		3			
II			2			2
III		2		2	2	
IV		1	2		1	
V			3		2	2

3- High 2-Moderate 1-Low

Mapping of Course Outcomes and Programme Outcomes

Year	Semester	Course Name	PO1	PO2	PO3	PO4	PO5	PO6
I	1	Process in Design	-	-	-	-	1	3
		Contemporary Architectural Practices	-	-	2	-	2	-
		Society, Culture, Media and Technology	-	-	-	-	3	-
		Predictive Building Modelling Techniques	3	-	-	2	3	3
		Process Based Design Studio	1	-	2	-	-	2
		Professional Elective I	-	-	-	-	-	-
	2	Research Methodologies for Built Environment	3	2	-	-	-	-
		Sustainable Architecture- Historic and Community Perspective	-	-	-	3	2	-
		Climate Change Adaptation and Resilience in Architecture	-	-	-	3	2	-
		Geographical Information Systems for Built Environment	1	-	2	-	-	3
		Sustainable Design Studio	1	-	-	3	2	2
		Professional Elective II	-	-	-	-	-	-
II	3	Urban Design: Theory and Practice	-	-	2	-	3	-
		Architectural Conservation: Policies and Practice	-	-	-	2	3	-
		Thesis Phase I	3	3	2	-	-	-
		Urban Environment Design Studio	1	-	-	-	3	2
		Professional Elective III	-	-	-	-	-	-
		Internship Training	1	-	2	-	-	-
	4	Thesis Phase II	2	2	2	2	3	3

3- High 2-Moderate 1-Low

ANNA UNIVERSITY, CHENNAI
UNIVERSITY DEPARTMENTS
M. ARCH. (GENERAL). FULL-TIME PROGRAMME
REGULATIONS 2023
CHOICE BASED CREDIT SYSTEM
I TO IV SEMESTERS CURRICULA AND SYLLABUS

SEMESTER I

SL. NO.	COURSE CODE	COURSETITLE	CATE-GORY	PERIODS PERWEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P/S		
THEORY								
1.	AA3101	Process in Design	PCC	3	0	0	3	3
2.	AA3102	Contemporary Architectural Practices	PCC	3	0	0	3	3
3.	AA3103	Society, Culture, Media and Technology	PCC	3	0	0	3	3
THEORY CUM STUDIO								
4.	AA3111	Predictive Building Modelling Techniques	EEC	1	0	3	4	4
STUDIO								
5.	AA3121	Process Based Design Studio	PCC	0	0	10	10	10
			TOTAL	**10**	**0**	**13**	**23**	**23**
PROFESSIONAL ELECTIVE								
6.		Professional Elective I	PEC	X	X	X	3	3
						TOTAL	**26**	**26**

SEMESTER II
(Prerequisite- Pass in Process Based Design Studio)

SL. NO.	COURSE CODE	COURSETITLE	CATE-GORY	PERIODS PERWEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P/S		
THEORY								
1.	AA3201	Research Methodologies for Built Environment	RMC	3	0	0	3	3
2.	AA3202	Sustainable Architecture- Historic and Community Perspective	PCC	3	0	0	3	3
3.	AA3203	Climate Change Adaptation and Resilience in Architecture	PCC	3	0	0	3	3
THEORY CUM STUDIO								
4.	AA3211	Geographical Information Systems for Built Environment	EEC	1	0	3	4	4
STUDIO								
5.	AA3221	Sustainable Design Studio	PCC	0	0	10	10	10
			TOTAL	**10**	**0**	**13**	**23**	**23**
PROFESSIONAL ELECTIVE								
6.		Professional Elective II	PEC	X	X	X	3	3
						TOTAL	**26**	**26**

SEMESTER III

(Prerequisite- Pass in Sustainable Design Studio)

SL. NO.	COURSE CODE	COURSETITLE	CATE-GORY	PERIODS PERWEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P/S		
THEORY								
1.	AA3301	Urban Design: Theory and Practice	PCC	3	0	0	3	3
2.	AA3302	Architectural Conservation: Policies and Practice	PCC	3	0	0	3	3
STUDIO								
3.	AA3321	Thesis Phase I	PCC	0	0	6	6	6
4.	AA3322	Urban Environment Design Studio	PCC	0	0	10	10	10
			TOTAL	**6**	**0**	**16**	**22**	**22**
PROFESSIONAL ELECTIVE								
5.		Professional Elective III	PEC	X	X	X	3	3
INTERNSHIP TRAINING								
6.	AA3311	Internship Training	EEC	X	X	X	X	2
							TOTAL	**27**

SEMESTER IV

(Prerequisite- Pass in Urban Environment Design Studio)

SL. NO.	COURSE CODE	COURSE TITLE	CATE-GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P/S		
STUDIO								
1.	AA3421	Thesis Phase II	PCC	0	0	16	16	16
						TOTAL	**16**	**16**

TOTAL NO. OF CREDITS: 95

PROFESSIONAL CORE COURSES (PCC)

S NO.	COURSE CODE	COURSE TITLE	CATE-GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P/S		
1.	AA3101	Process in Design	PCC	3	0	0	3	3
2.	AA3102	Contemporary Architectural Practices	PCC	3	0	0	3	3
3.	AA3103	Society, Culture, Media and Technology	PCC	3	0	0	3	3
4.	AA3121	Process Based Design Studio	PCC	0	0	10	10	10
5.	AA3201	Research Methodologies for Built Environment	RMC	3	0	0	3	3
6.	AA3202	Sustainable Architecture - Historic and Community Perspective	PCC	3	0	0	3	3

7.	AA3203	Climate Change Adaptation and Resilience in Architecture	PCC	3	0	0	3	3
8.	AA3221	Sustainable Design Studio	PCC	0	0	10	10	10
9.	AA3301	Urban Design: Theory and Practice	PCC	3	0	0	3	3
10.	AA3302	Architectural Conservation: Policies and Practice	PCC	3	0	0	3	3
11.	AA3321	Thesis Phase I	PCC	0	0	6	6	6
12.	AA3322	Urban Design Studio	PCC	0	0	10	10	10
13.	AA3421	Thesis Phase II	PCC	0	0	16	16	16

PROFESSIONAL ELECTIVE COURSES (PEC)

SEMESTER I, ELECTIVE I

SL. NO.	COURSE CODE	COURSE TITLE	CATE-GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P/S		
1.	AA3001	Explorations in Architectural Form	PEC	2	0	1	3	3
2	AA3002	Architecture and Critical Theory	PEC	3	0	0	3	3
3.	AA3003	Environmental Psychology	PEC	3	0	0	3	3
4.	AA3004	Architectural Lighting	PEC	3	0	0	3	3
5.	AA3005	Performance Evaluation of Buildings	PEC	2	0	1	3	3
6.	AA3006	Soft Skills	PEC	2	0	1	3	3

SEMESTER II, ELECTIVE II

SL. NO.	COURSE CODE	COURSE TITLE	CATE-GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P/S		
1.	AA3007	Anthropology and Architecture	PEC	3	0	0	3	3
2.	LN3051	Landscape Urbanism	PEC	3	0	0	3	3
3.	AA3008	Emerging Practices in Housing	PEC	3	0	0	3	3
4.	AA3009	Appropriate Technologies and Sustainable Construction	PEC	3	0	0	3	3
5.	AA3010	Building Skins and Smart Materials	PEC	3	0	0	3	3
6.	AA3011	Sustainable Building Services and Water Management	PEC	3	0	0	3	3
7.	AA3012	Facilities Programming and Management for Architecture	PEC	3	0	0	3	3

SEMESTER III, ELECTIVE III

SL. NO.	COURSE CODE	COURSE TITLE	CATE-GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P/S		
1.	AA3013	Urban Cultural Landscapes	PEC	3	0	0	3	3
2.	AA3014	Retrofitting and Adaptive Reuse	PEC	3	0	0	3	3
3.	AA3015	Urban Infrastructure and Management	PEC	3	0	0	3	3
4.	AA3016	Psychology of Learning and Development	PEC	3	0	0	3	3
5.	AA3017	Theory of Architectural Education	PEC	3	0	0	3	3
6.	AA3018	Architectural Journalism and Photography	PEC	2	0	1	3	3
7.	AA3019	Advanced Professional Practice	PEC	3	0	0	3	3

EMPLOYMENT ENHANCEMENT COURES (EEC)

SL. NO.	COURSE CODE	COURSE TITLE	CATE GORY	PERIODS PER WEEK			TOTAL CONTACT PERIODS	CREDITS
				L	T	P/S		
1.	AA3111	Predictive Building Modelling Techniques	EEC	1	0	3	4	4
2.	AA3211	Geographical Information Systems for Built Environment	EEC	1	0	3	4	4
3.	AA3311	Internship Training	EEC	X	X	X	X	2

SUMMARY

Sl. No	Subject Area	Credits per Semester				Credits Total
		I	II	III	IV	
1	PCC	19	16	22	16	73
2	PEC	3	3	3		09
3	EEC	4	4	2		10
4	RMC		3			03
	Total	**26**	**26**	**27**	**16**	**95**

AA3101	PROCESS IN DESIGN	L	T	P/S	C
		3	0	0	3

OBJECTIVES

- To impart knowledge about the history of process in the discipline of design.
- To give familiarity to different processes in design- analytical, social, computational, etc.,
- To provide an overview of various contemporary design processes and its relation to computation.

UNIT I INTRODUCTION 6

History of design process across time. Types of Design- unselfconscious Design/ self-conscious design, design through craft/ design through craft, etc., Design Methodology movement. Different models of the design process.

UNIT II ASPECTS OF DIGITAL ARCHITECTURE 9

Investigation of contemporary theories of media and their influence on the perception of space and architecture. Technology and Art. Technology and Architecture. Technology as Rhetoric. Digital Technology and Architecture. Aspects of Digital Architecture. Design and Computation. Difference between Digital Process and Non-Digital Process. Architecture and Cyber Space. Qualities of the new space. Issues of Aesthetics and Authorship of Design. Increased Automatism and its influence on Architectural Form and Space

UNIT III CONTEMPORARY PROCESS 9

Overview of various Contemporary processes to understand existing situations such as mapping, etc., Design process and its relation to computation. Diagrams. Diagrammatic Reasoning. Diagrams and Design Process. Animation and Design. Digital Hybrid Design Protocols. Concept of Emergence. Introduction to Cellular Automata and Architectural applications. Genetic algorithms and Design Computation.

UNIT IV GEOMETRIES AND SURFACES 9

Fractal Geometry and their properties. Architectural applications. Works of ZviHecker. Shape Grammar. Shapes, rules and Label. Shape Grammar as analytical and synthetic tools.Combining Shape grammar and Genetic algorithm to optimize architectural solutions.Hyper Surface. Introduction to Hyper surface and concepts of Liquid architecture.

UNIT V PROCESS AND PEOPLE 12

Overview of different methods related to study and design in the context of people. User behavior studies, post occupancy studies, participatory approach to design, collaborative processes, computational processes related to people.

TOTAL: 45 PERIODS

COURSE OUTCOMES

CO1 An understanding of the importance of process in design across time

CO2 An understanding of various tools to study the existing and processes to design future desirable situations.

REFERENCES

1. Geoffrey Broadbent, 'Design in Architecture - Architecture and the Human Sciences', D.Fulton, 1988.
2. Christopher Alexander, ‘A Pattern Language’, Oxford, 2015.
3. Christopher Jones, 'Design Methods', John Wiley and Sons, 1980.
4. Peter Eisenmann, ‘Diagram Diaries’, Thames & Hudson Ltd., October 1999.
5. Ben van Berkel and Caroline Bos, ‘MOVE’, UN Studio, 2008.
6. Greg Lynn, ‘Architecture Curvilinearity: The Folded, The Pliant and The Supple’, Architectural Design 63: Folding Architecture, Academy Editions, London, 1993.
7. Greg Lynn, ‘Animate Form’, American Academic Research, 2018.

8. Ali Rahim, 'Contemporary Process in Architecture', John Wiley and Sons, 2000.
9. Walter Benjamin, 'Work of Art in the Age of Mechanical Reproduction', Penguin, 2008.
10. William J Mitchell, 'The Logic of Architecture: Design, Computation and Cognition', MIT Press, Cambridge, 1998.
11. Marcos Novak, 'Invisible Architecture: An Installation for the Greek Pavilion', Venice Biennale, 2000.

CO – PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	-	-	-	-	**1**	**3**
CO2	-	-	-	-	**1**	**3**
AVERAGE	-	-	-	-	1	3

3- High 2-Moderate 1-Low

AA3102 CONTEMPORARY ARCHITECTURAL PRACTICES L T P/S C
3 0 0 3

OBJECTIVES

- To impart knowledge about contemporary architectural practices/ practitioners along with stated ideas/ theoretical writings.
- To give an understanding about how architectural practices engage with issues/ conditions.
- To give an understanding of architecture as a product of the context that produces it as well as a way towards the future.
- To enable engagement in architectural interpretation and criticism

UNIT I ARCHITECTURE AND IDEAS/ INTENT 9

Understanding and interpreting works of architects who explicitly state their ideas/ theories for example Bernard Tschumi, Peter Eisenman. Understanding and interpreting contemporary Iconic architecture/ Starchitecture through stated intent of architect and final form- for example Gehry, Zaha Hadid, Libeskind, BIG architects

UNIT II ARCHITECTURE AND CONTEXT 9

Understanding and interpreting works of architects whose response to universals and particulars of context – social/ cultural/ environmental are considered exemplary- for example Zumthor, Murcutt, Siza, Barragan, Souto de Moura, Correa, Doshi, Aravena. Ken Yeang, William McDonough.

UNIT III ARCHITECTURAL FORM IN THE DIGITAL AGE 9

Understanding and interpreting works of architects who are considered exemplary in their engagement with the digital age and technology through contemporary processes- for example Greg Lynn, ZHA, UNstudio, NOX, Novak, FOA, Gehry,

UNIT IV ARCHITECTURE AND THE CITY 9

Understanding and interpreting works of architects who include the city and its forces within the discourse of architecture - for example Rem Koolhaas, MVRDV.

UNIT V EMERGING ARCHITECTURAL PRACTICES IN INDIA 9

Study and analysis of emerging practices in India along with their stated ideals/ approaches/ writings in the context of the diverse interests and concerns of the contemporary world.

TOTAL: 45 PERIODS

COURSE OUTCOMES

CO1 A critical understanding of contemporary architectural practice that is influenced by or informed by specific conditions/ ideas/ situations and that is explicitly evident in the final work.

CO2 An ability to understand the role of architecture as built propositions towards future by interpreting the present

REFERENCES

1. B.V.Doshi, Paths Uncharted
2. Bjarke Ingels, Yes is More
3. Daniele Pauly, Barragan, Space and Shadow, Walls and Colour, Birkhauser 2002
4. Harry Francis Mallgrave and David Goodman, An Introduction to Architectural Theory- 1968 to the present, Wiley Blackwell 2011
5. Kate Nesbitt, Theorizing a New Agenda for Architecture, Princeton Architectural Press, 1996
6. Koolhaas, Rem, and Bruce Mau, S, M, L, XL. New York: Monacelli Press, 1995
7. Lynn, Greg. Animate Form. New York: Princeton Architectural Press, 1999
8. Michael Hays (ed) Architectural Theory since 1960,MIT Press, 2000
9. MVRDV, FARMAX
10. Rahul Mehrotra, Architecture in India since 1990
11. Steven Holl, Juhani Pallasmaa, Alberto Pérez Gómez, Questions of perception: phenomenology of architecture, William Stout, 2006
12. Tschumi, Bernard. Architecture and Disjunction. Cambridge, MA: MIT Press, 1994

CO – PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	-	-	**1**	-	-	**3**
CO2	-	-	**3**	-	-	**1**
AVERAGE	-	-	2	-	-	2

3- High 2-Moderate 1-Low

AA3103 SOCIETY, CULTURE, MEDIA AND TECHNOLOGY L T P/S C

3 0 0 3

OBJECTIVES

- To introduce the interdisciplinary field of research, science, technology and society studies.
- To create awareness of the interface between science, technology and society from a theoretical perspective.

UNIT I SOCIOLOGY OF SCIENTIFIC KNOWLEDGE 9

Relationship between science and the social, Conventional view of philosophers and historians of science, Sociology of Science (Karl Manheim-Robert K. Merton), Social Function of Science (Joseph Bernal). The Radical Science Movement- the Kuhnian intervention. Science as a social activity: Strong Program, Laboratory Studies/ethnography of science, Actor Network Theory (Bruno Latour). Communicating science to peers, scientific controversies, public engagement with Science & Technology -the changing configuration of science, mode II knowledge production.

UNIT II TECHNOLOGY – SOCIETY INTERFACE I 9

Techno science and the Interpenetration of Science & Technology

Questioning of the traditional boundary between science (knowing) and technology (doing). How science and technology together shape the ways in which knowledge is constructed. Technological Determinism, Power and the Politics of Knowledge Production.

UNIT III TECHNOLOGY – SOCIETY INTERFACE II 9

Technology in Context: Perspectives in Science, Technology and Society (STS) Studies.

Various perspectives on Technology in Science, Technology and Society(STS) studies; Social Shaping of Technology - Social Construction of Technology, Actor Network Theory, Transition in Socio-Technical Systems. Multi-Level Perspective, Critical Theory of Technology. Contributions of Trench, Lewenstein, Jasanoff & Vishvanathan---governance and ethical issues in the context of emerging technologies. Influence of local contexts —democratisation and 'up-stream' public engagement with technology.

UNIT IV NEW MEDIA 9

The new communication paradigm brought about by digital technologies. Digitality (Digital versus Analogue Media) – Interactivity, Extractive versus immersive navigation, Registrational Interactivity and Interactive communication – Hypertextuality - Networked Media –Virtuality

UNIT V VISUAL CULTURE 9

Introduction and definitions of Visual Culture- Visual Culture Studies - New ways of seeing – Decoding Images – Visual Cultural Perspectives – High and low culture – Images and Power – Images and Ideology – Picture Theory – Representation – Image and Meaning – The myth of the Image – Medium is the Message

TOTAL: 45 PERIODS

COURSE OUTCOMES

CO1 Understanding of trends that problematize production of scientific knowledge and the sociology of scientific knowledge

CO2 Familiarity with the technology-society interface from a wide range of theoretical Stand points such as social shaping of technology, social constructionist and actor network theoretical perspectives

CO3 Understanding of science and technology as socially and culturally embedded activities.

REFERENCES

1. Collins, Harry and Pinch, Trevor 1993. The Golem: What Everyone should Know about Science. Cambridge: Cambridge University Press.
2. Hess, David J. 1995. Science and Technology in a Multicultural World: The Cultural Politics of Facts and Artefacts. New York: Columbia Press.
3. Hess, David J. 1997. Science Studies: An Advanced Introduction. New York: NewYork University Press.
4. Jasanoff, Sheila et al. (eds.). 1995. Handbook of Science and Technology Studies. Thousand Oaks, CA: Sage Publications.
5. MacKenzie, Donald and Judy Wajcman 1999 (eds.). The Social Shaping of Technology, 2nd edition, Open University Press.
6. Sismondo, Sergio 2010. An Introduction to Science and Technology Studies (2nd edition). Chichester: Wiley-Blackwell.
7. Mirzoeff, Nicholas, An Introduction to Visual Culture, Routledge
8. Bijker, Wiebe E. et al. 1989. The Social Construction of Technological Systems. Cambridge, MA: MIT Press.
9. Bloor, David 1976. Knowledge and Social Imagery, second edition, London: Routledge and Kegan Paul.
10. Mccluhan, Marshall, The Medium is the Message, From Understanding Media: The Extensions of Man.

CO – PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	-	-	-	-	**3**	-
CO2	-	-	-	-	**3**	-
CO3	-	-	-	-	**3**	-
AVERAGE	-	-	-	-	3	-

3- High 2-Moderate 1-Low

AA3111 PREDICTIVE BUILDING MODELLING TECHNIQUES L T P/S C
1 0 3 4

OBJECTIVES

- To give knowledge and enable skill in modelling techniques and passive strategies for assessing the energy performance, environmental response and impact of built form.

UNIT I PREDICTIVE BUILDING MODELLING 15

Modelling-Simple Modelling, Advanced Modelling. Understanding and familiarizing with Layers and Zones, Objects and Nodes, Element, Types, Object Relationships, Display Options, Viewing the Model and Operational Modes.

UNIT II SOLAR ANALYSIS 10

Solar Analysis- Shading Analysis, Shading Design. Learning to - Display and animate complex shadows and reflections, Generate interactive sun-path diagrams for instant overshadowing analysis and Calculate the incident solar radiation on any surface and its percentage shading.

UNIT III LIGHTING ANALYSIS 10

Lighting Analysis–Day lighting Analysis, Artificial Lighting Analysis. Learning to work out daylight factors and artificial lighting levels either spatially or at any point.

UNIT IV THERMAL ANALYSIS 10

Thermal Analysis- Thermal Modelling Issues, Basic Thermal Analysis, Advanced Thermal Analysis. Understanding how to calculate monthly heat loads and hourly temperature graphs for any zone.

UNIT V INTEGRATED PASSIVE ENERGY STRATEGIES 15

Cognitive, analytical and simulated modeling and design of buildings. zero net energy (ZNE) building-Traditional buildings-electrical grid - HVAC and lighting-Net Zero Energy Building -Case studies.

TOTAL: 60 PERIODS

COURSE OUTCOMES

CO1 Knowledge and ability to use predictive Modelling techniques for assessing the energy performance through different software.
CO2 Understanding of how to calculate the percentage of shade and incident solar radiation on any surface.
CO3 Knowledge how to compute hourly temperature graphs and monthly heat loads for any zone to achieve thermal comfort.
CO4 understanding of building simulation modelling and design

REFERENCES

1. Clarke, Joseph; "Energy Simulation in Building Design", Second Edition Butterworth, 2001.
2. Energy Efficient Buildings in India,The Energy and Resources Institute, TERI, 2009.

3. Kabele, K., “Modeling and analyses of passive solar systems with computer simulation”, in Proc. Renewable energy sources, PP. 39 – 44, Czech Society for Energetics Kromeriz 1998.
4. Manual of the selected software – Ecotect Analysis 2011 ,TAS-version 9.2.1.6, etc
5. MoneefKrarti, Energy Audit of Building Systems- CRC Press, 2000 ESRU,. Building Energy Simulation Environment; User Guide Version 9 Series. “ESRU Manual U 96/1, University of Strathclyde, Energy Systems Research Unit, Glasgow, 1996.
6. Voss, Karsten; Musall, Eike: "Net zero energy buildings - International projects of carbon neutrality in buildings", Munich, 2011.

CO – PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	-	-	-	2	-
CO2	-	-	-	2	3	-
CO3	-	-	-	2	-	-
CO4	-	-	-	-	-	3
AVERAGE	3	-	-	2	3	3

3- High 2-Moderate 1-Low

AA3121 PROCESS BASED DESIGN STUDIO L T P/S C
0 0 10 10

OBJECTIVES

- To enable understanding of complex situations through engaging appropriate tools that help analyse different aspects of the situations.
- To help incorporate appropriate processes into design- social, environmental, parametric/ contemporary process, computational process, etc., in order to get a holistic design/ address the most crucial aspects of a given design situation.

CONTENT

The increasing complexity of the world today needs a richer analysis to understand interconnected layers. Also, this complexity is correspondingly reflected in the needs of buildings and the built environment. Appropriate design processes can help in study, analysis and integration of specific inputs and needs into the projects. The studio will focus on engaging processes for study/ analysis and for incorporating complex inputs/ data into design so that architecture can address human needs in a holistic manner. Processes such as diagramming, mapping, participatory approaches, collaboration, statistics, data, etc., would be used to understand situations such as macro environment, socio-cultural aspects, user behaviour, aspects of contemporary life, activity and movement, landform, urban form, etc., as required. The projects could be of macro scale involving large campus/ township oriented architectural projects and/ or architectural design interventions in the urban context. The idea of process in design can be deterministic/ generative/ innovative as appropriate for a particular studio project situation.

In the study and proposition stage, focus would be on how to study and analyse/ understand a situation through appropriate processes based on the design project and context given. At the end of this, the nature of the problem and the nature of the solution would be arrived at.

In the design stage, the aim is to project a solution from the process. The outcome will be a workable, ingenious, innovative solution of any scale based on the project. The emphasis would be on how the design solution is connected to the intent through the process and is generated through the process.

TOTAL: 150 PERIODS

COURSE OUTCOMES

CO1 Ability to identify, study the effects and connections of complex forces and project a desired scenario for a given situation through appropriate processes and tools

CO2 Ability to find innovative and workable transformations of the existing from the projections in an organic manner.

REFERENCES

1. Branko Kolarevic, 'Architecture in the Digital Age: Design and Manufacturing, Spon Press, 2003.
2. Achim Menges, Sean Ahlquist, Eds, 'Computational Design Thinking, AD Reader', John
3. Wiley & Sons, 2011.
4. Robert Woodbury, 'Elements of Parametric Design', 1st Edition, Routledge, 2010.
5. Paul Coates, 'Programming Architecture',1st Edition, Routledge, 2010.
6. Wassim Jabi, Brian Johnson, Robert Woodbury, 'Parametric Design for Architecture', Laurence King Publishing, 2013.
7. Katherine Melcher, Barry Stiefel, Kristin Faurest, Eds, 'Community-Built: Art, Construction,
8. Preservation, and Place', 1st Edition, Routledge, 2016.
9. Nishat Awan, Tatjana Schneider, Jeremy Till, 'Spatial Agency: Other Ways of Doing Architecture', Routledge, 2011.
10. Philip Plowright, 'Revealing Architectural Design: Methods, Frameworks and Tools', Routledge, 2014.
11. Wendy Gunn, Ton Otto, Rachel Charlotte Smith, 'Design Anthropology: Theory and Practice', Berg, 2013.
12. C. Thomas Mitchell, 'Redefining Designing: From Form to Experience', Van Nostrand Reinhold, 1992.

CO – PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	1	-	**1**	-	-	**1**
CO2	1	-	**3**	-	-	**3**
AVERAGE	1	-	2	-	-	2

3- High 2-Moderate 1-Low

AA3201 RESEARCH METHODOLOGIES FOR BUILT ENVIRONMENT L T P/S C
3 0 0 3

OBJECTIVES

- To give introduction to the importance of critical inquiry as a way of gaining knowledge and adding to it through research.
- To give exposure to the various forms of research and research methodologies/ processes.
- To understand research in the specific domain of built environment research.

UNIT I INTRODUCTION 9

Basic research issues and concepts. Orientation to research process. Types of research: historical, qualitative, co-relational, experimental, simulation and modelling, logical argumentation, case study and mixed methods. Illustration using research samples including research in the domain of built environment.

UNIT II RESEARCH PROCESS 9

Elements of Research process: finding a topic, writing an introduction, stating a purpose of study, identifying key research questions and hypotheses, reviewing literature, using theory, defining, delimiting and stating the significance of the study, advanced methods and procedures for data collection and analysis. Illustration using research samples including research in the domain of built environment.

UNIT III RESEARCHING AND DATA COLLECTION 9

Library and archives. Internet: New information and the role of internet. Finding and evaluating sources. Misuse. Test for reliability. Ethics.

Methods of data collection- Primary sources: observation and recording, interviews structured and unstructured, questionnaire, open ended and close ended questions and the advantages, sampling. Collecting data from secondary sources.

UNIT IV REPORT WRITING 9

Research writing in general and its components. Developing the outline, referencing, writing the bibliography, presentation, etc.

UNIT V CASE STUDIES 9

Case studies of competent research, from project inception to completion with a focus on research in the domain of built environment. Review of research publications.

TOTAL: 45 PERIODS

COURSE OUTCOMES

CO1 Skill to identify, decipher and interpret issues relating to architecture based on research enquiry methods

CO2 Knowledge of different methods of conducting research and research writing

CO3 Familiarity with specific research related to built environment.

REFERENCES

1. Linda Groat and David Wang, 'Architectural Research Methods', 2nd edition, John Wiley and Sons Inc, Hoboken, New Jersey, US, 2013.
2. Wayne C Booth, Joseph M Williams Gregory G. Colomb, 'The Craft of Research', 3rd Edition, Chicago Guides to Writing, Editing and Publishing, 2008.
3. Iain Borden and Katerina Ruedi, 'The Dissertation: An Architecture Student's Handbook', Edition 2, Architectural Press, 2005
4. Ranjith Kumar, 'Research Methodology- A Step by Step guide for Beginners', 4th Edition, Sage Publications, 2014.
5. John W Creswell, 'Research Design: Qualitative, Quantitative and Mixed Methods Approaches', Sage Publications, 2013.
6. JA Smith, P Flowers, M Larkin, 'Interpretative Phenomenological Analysis: Theory, Method and Research (English),I Edition, Sage Publications, 2009.

CO – PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	2	-	-	-	-
CO2	3	2	-	-	-	-
CO3	3	2	-	-	-	-
AVERAGE	3	2	-	-	-	-

3- High 2-Moderate 1-Low

AA3202 SUSTAINABLE ARCHITECTURE - HISTORIC AND COMMUNITY PERSPECTIVE

L	T	P/S	C
3	0	0	3

OBJECTIVES

- To give familiarity about the evolution of the idea of sustainability in built environment from the past to the present.
- To inform about sustainable concepts and principles of vernacular and historical

architecture.

- To give knowledge about contemporary applications of traditional principles of sustainability
- To give overview of practices, strategies and implementation processes that shape sustainable architecture.

UNIT I INTRODUCTION TO SUSTAINABILITY 6

Basics of ecology, ecosystems, energy and material cycles in nature. Function of ecosystem. Concept of Sustainability and Sustainable Development. Issues of sustainability in the current world. Difference between Green and Sustainable design. Need, premise and strategies for sustainable and green design. Need for finding holistic solutions.

UNIT II SUSTAINABLEBUILT ENVIRONMENT ACROSS HISTORY 12

Life style of early humans. Evolution of sustainability. Ancient and traditional perspectives in neighbourhood planning and architecture from cultures across the world. Planning principles and concepts of historic and vernacular Indian cities/settlements with respect to sustainability. Cultural beliefs associated with the principles/ concepts.

UNIT III TRADITIONAL ARCHITECTURE AND ITS RESPONSE TO CLIMATE 9

Sustainable architecture in human settlement planning and housing – examples from vernacular and planned cities in different geo-climatic zones. Climatic response of vernacular architecture - analytical studies including developing scientific evidence. Water management in buildings- water saving/ demand management, water harvesting for recharge and use, reuse/ recycling.

UNIT IV SUSTAINABILITY LESSONS FROM TRADITIONAL ARCHITECTURE 9

Scale and context of sustainability, issues and solutions in the current world. Relevance of traditional and vernacular architecture in finding sustainable solutionsto present situations. Importance of application of principles of traditional and vernacular architecture in modern context to achieve sustainability in various aspects- urban built space ratios, urban street canyons, environmental design and cultural identity, etc., Case studies of contemporary examples inspired from the past.

UNIT V STRATEGIES FOR SUSTAINABLE DESIGN 9

Community Participation in developing sustainable designs. Participatory approaches to learning and development. Building and planning requirements. Green Building Evaluation Systems: LEED, GRIHA. Legal instruments/ incentives for sustainable buildings. New concepts and trends in green buildings, national and international.

TOTAL: 45 PERIODS

COURSE OUTCOMES

CO1 An understanding of relation between sustainability and human history.

CO2 Knowledge about sustainable principles in built environments from the past and familiarity with their applications in contemporary situations

CO3 An understanding of sustainability in a holistic manner, incorporating past knowledge and current developments in the field.

REFERENCES

1. Ken Yeang, ‘Eco design - A Manual for Ecological Design’, Wiley- Academy, Chichester,2008.
2. Sue Roafet all, ‘Ecohouse: A Design Guide’ Routledge, London, 2013.
3. Thomas E Glavinich, Contractor’s guide to Green Building Construction: Management, roject delivery, documentation and risk reduction’, Wiley, 2008.
4. Daniel Vallero and Chris Brasier; ‘Sustainable Design- The science of sustainability and Green Engineering’, Wiley, 2008.
5. Margaret Robertson, ‘Sustainability Principles and Practice’, Routledge, Abingdon, 2017.
6. Martin A. A. Abraham, ‘Sustainability Science and Engineering: Defining Principles’, Elsevier Science, 2005.
7. Tony Clayton, Nicholas J. Radcliffe, Anthony M. H. Clayton, ‘Sustainability: A Systems Approach’, Routledge, 2018.
8. Stephen M. Wheeler, ‘Climate Change and Social Ecology: A New Perspective on the Climate Challenge’, Routledge, New York, 2012.

9. Gursharan Singh Kainth, 'Climate Change, Sustainable Development and India: Need for new economic thought', LAP Lambert Academic Publishing, 2011.

CO – PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	-	-	-	3	2	-
CO2	-	-	-	3	2	-
CO3	-	-	-	3	2	-
AVERAGE	-	-	-	3	2	-

3- High 2-Moderate 1-Low

AA3203 CLIMATE CHANGE ADAPTATION AND RESILIENCE IN ARCHITECTURE **L T P/S C**
3 0 0 3

OBJECTIVES

- To give understanding of the effects of climate change at global and local levels.
- To inform about vulnerability assessment methods.
- To give knowledge about strategies and methods in the design of built environment for adaptation, mitigation and resilience with respect to climate change.
- To give knowledge about government policies with respect to measures regarding climate change.

UNIT I INTRODUCTION TOCLIMATE CHANGE 6

Climate Change across History. Causes of Climate Change. Anthropogenic drivers of climate change. Global warming, greenhouse effect, carbon stocks and flow, Interaction of these factors at global and Indian scale. Evidences of climate change. Climate change predictions at macro and micro level. Disaster vulnerability of India with emphasis on climate change.

UNIT II ADAPTATION TO CLIMATE CHANGE/ITS EFFECTS 12

Complexities and uncertainties rising out of climate change in built environment. Climate Adaptation, mitigation and resilience related to climate change. Reactive and proactive measures. Climate adaptation in contemporary architecture. Need for sustainable measures in disaster mitigation. Changes in the ecosystem post disaster. Restoring ecological balance post disaster. Climate adaptation in architecture. Relationship between nature and built form. Response and adaptation of vernacular and traditional architecture to climatic conditions and effects of climate change.

UNIT III MITIGATION OF CLIMATE CHANGE 9

Vulnerability analysis and assessment. Social Consequences. Climate change mitigation in buildings andurbanism. Mitigation from demand and supply side mitigation. Service Demand Reduction. Carbon Trading. Mitigation strategies –carbon efficiency, reduction of building related emissions.Case Studies. International mechanisms to support climate change mitigation and low carbon development.

UNIT IV CLIMATE CHANGE AND RESILIENT ARCHITECTURE 12

Architectural responses to impact of climate change. Concept of climate resilience. Components and action for resilient built forms. Planning strategies, methods and tools for resilient architecture at various scales reacting to earthquakes, floods, cyclones, storms, temperature, etc. Resilient back up and power systems. Lighting services during emergency. Resilient HVAC, water, storm water and grey water systems.

UNIT V LEGAL FRAMEWORKS, CODES AND POLICIES, STRATEGIES 6

Climate change initiatives at international level and participating bodies. Goals, objectives, challenges. IPCC, UNFCCC, Kyoto Protocol, Montreal Protocol and Paris Agreement. Climate change policy framework. India's Response to Climate Change. NAPCC and SAPCC. Green actions of India.

TOTAL: 45 PERIODS

COURSE OUTCOMES

CO1 An understanding of the impact of climate change and specific vulnerabilities related to it.

CO2 Knowledge about designing built environment with respect to adaptation, mitigation and resilience associated with climate change

CO3 Familiarity with frameworks for addressing climate change.

REFERENCES

1. R.K.Pachauri, 'Dealing with Climate Change: Setting a global agenda for mitigation and adaptation', The Energy and Resources Institute (TERI), 2010.
2. Daniel D. Perimutter, 'The Challenge of Climate change: Which way now?', John Wiley & sons ltd., 2010
3. Peter F Smith, 'Architecture in a Climate of Change', Routledge, London, 2016.
4. William Gethering, Katie Puckett, 'Design for Climate Change', RIBA, London, 2013.
5. David Crichton, Fergus Nicol, Sue Roaf, 'Adapting Buildings and Cities for Climate Change', Taylor and Francis, 2016.
6. Madan Kumar Jha, 'Natural and Anthropogenic Disasters: Vulnerability, Preparedness and Mitigation', Springer, 2016.
7. George Baird, 'The Architectural Expression of Environmental Control Systems', Taylor & Francis, London, 2004.
8. Aravind Krishna, Nick Baker, SimosYannas and Szokolay S V, 'Climate Responsive Architecture: A Design handbook for energy efficientbuildings' McGraw-Hill Education, 2017.
9. Brown.G.Z. and Mark Dekay, 'Sun, Wind and Light: Architectural Design Strategies', John Wiley and Sons inc.,2014.
10. Tri HarsoKaryono, Robert Vale, Brenda Vale, 'Sustainable Building and Built Environments to Mitigate Climate Change in the Tropics-Conceptual and Practical Approaches', Springer, 2017.
11. Colin A. Booth, Felix N. Hammond, David G. Proverbs, Jessica Lamond, 'Solutions for Climate Change Challenges in the Built Environment', John Wiley & Sons, 2011.

CO – PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	-	-	-	3	2	-
CO2	-	-	-	3	2	-
CO3	-	-	-	3	2	-
AVERAGE	-	-	-	3	2	-

3- High 2-Moderate 1-Low

AA3211 GEOGRAPHICAL INFORMATION SYSTEMS FOR BUILT ENVIRONMENT L T P/S C
1 0 3 4

OBJECTIVES

- To introduce role of GIS in
- To give basic familiarity with the concepts, tools and techniques of GIS
- To give training in the application of GIS for built environment.

UNIT I INTRODUCTION TO G.I.S 9

Introduction to Geographical Information System (GIS). Defining the objectives of GIS in problems related to the macro environment. Outline of commercial and open source GIS software and introduction to basic components of GIS software. Outline of Spatial and non spatial data. Understanding of Projection and Coordinate systems. Preparation of map with appropriate format for specific purposes.

UNIT II SPATIAL AND ATTRIBUTE DATA INPUT 18

Passive and Active Remote Sensing, Image Processing – Spectral Signature Curve, GPS, Aerial Photograph, Satellite Imagery, LIDAR and Drones. Identification of required spatial data layers. Coding schemes. National Urban Information System. Digitisation of spatial data. Editing. Geo-referencing of Satellite Imagery, Cadastral Map, Role of attribute data in defining geographic features. Adding attribute data file. Topology generation. Joining attribute data to its geographic features

UNIT III SPATIAL ANALYSIS USING GIS 18

Generation of 3-D Model in GIS. Performing overlay functions. Manipulating attribute data. Preparation of Existing Land use. Map and report generation. Network Analysis.

UNIT IV MODELLING THE MACRO ENVIRONMENT 15

Need for modelling the macro environment for different scales and purposes. Modelling for suitability/ projects/ situations/ problems in the realm of landscape design, urban design, urban and environmental planning.

TOTAL: 60 PERIODS

COURSE OUTCOMES

CO1 Awareness of GIS and the context of its use for different purposes

CO2 Knowledge of concepts, techniques, methods of GIS

CO3 Ability to apply GIS for specific situations/ realms involving the built environment

REFERENCES

1. Arthur. H. Robinson et al., 'Elements of Cartography', John Wiley & Sons, New York, 1995.
2. Judith. A. Tyner, ' Principles of Map Design', The Guilford Press, New York, 2010.
3. Ramesh Elmasri and Shamkant.B.Navate, 'Fundamentals of Database Systems', Pearson Education Limited, USA, 2010.
4. Anji Reddy.M., 'Text book of Remote Sensing and Geographical Information Systems', B.S.
5. Publications, Hyderabad, 2008.
6. Michael Law and Amy Collins, 'Getting to know ArcGIS Pro', ESRI Press, USA, 2016.
7. Paul. D. Zwick and Margaret.H. Carr, 'Smart Land-use Analysis: The LUCIS Model', ESRI Press, USA, 2007.
8. David Maquire, Michael Batty and Michael F.Goodchild, 'GIS,Spatial Analysis and Modeling', ESRI Press, 2005.
9. Cynthia A. Brewer, 'Designing Better Maps: A Guide for GIS Users' – 2nd Edition, ESRI Press, 2015.

CO – PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	1	-	2	-	-	3
CO2	1	-	2	-	-	3
CO3	1	-	2	-	-	3
AVERAGE	1	-	2	-	-	3

3- High 2-Moderate 1-Low

AA3221 **SUSTAINABLE DESIGN STUDIO** **L T P/S C**
0 0 10 10

OBJECTIVES

- To enable the incorporation of sustainability in architectural design at various scales.
- To help balance varied technical and planning considerations in building design with aspects of sustainability.

CONTENT

The studio will focus on the challenges of incorporating sustainable principles into architectural design projects and typologies of increased complexity that are prevalent in the contemporary world. Aspects of climatic response, resilience, planning, technology, services, density, height of construction, management, etc., would be examined along with considerations such as environmental performance, resource optimisation, ecological impact in order to produce a viable synthesis of diverging needs.

In study and overall design stage, focus would be on studying macro and micro level issues and coming up with design propositions and strategies. This may include policy, master plan, building design as the case may be based on the project.

In the detailed design stage, the aim is to freeze on the propositions and then develop a part of it to completion in all aspects. The outcome will be a workable solution to a part of a building project if the project is large or the entire building if the project is small. It could range from building envelope design to developing prototypical solutions.

TOTAL: 150 PERIODS

COURSE OUTCOMES

CO1 An ability to balance human needs with environmental concerns in architectural design.

CO2 Skill in executing a small part of a broader idea into a workable solution.

REFERENCES

1. SatyajitGhosh, Abhinav Dhaka, 'Green Structures: Energy Efficient Buildings', 1st Edition, Ane Books, 2016.
2. Mary Guzowski, 'Towards Zero Energy Architecture: New Solar Design', Laurence King Publishing, 2012.
3. Antony Wood, RubaSalib, Eds, 'Guide To Natural Ventilation in High Rise Office Buildings'1st Edition, Routledge, 2012.
4. BjørnBerge,'The Ecology of Building Materials', Architectural Press, 2009.
5. Paul Tymkow, SavvasTassou, Maria Kolokotroni, HussamJouhara, 'Building Services Design for Energy Efficient Buildings',1st Edition, Routledge, 2013.
6. Ian Ward, 'Energy and Environmental Issues for the Practising Architect',Thomas Telford Publishing, 2004.

CO – PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**
CO1	1	-	-	3	1	1
CO2	1	-	-	3	3	3
AVERAGE	1	-	-	**3**	2	2

3- High 2-Moderate 1-Low

AA3301 URBAN DESIGN: THEORY AND PRACTICE L T P/S C
3 0 0 3

OBJECTIVES

- To introduce the evolution of urbanism and the urban design discipline.
- To introduce tools and techniques used in critical enquiry into urban issues.
- To give understanding of the complex challenges faced by contemporary urbanism.
- To introduce emerging concepts and strategies in urban interventions.

UNIT I INTRODUCTION 12

Introduction to the origin and evolution of urbanism across the world with key examples. Historic overview of the development of the urban design discipline and principles.

UNIT II READING THE URBAN EN VIRONMENT 9

Introduction to the different tools and methods to read the urban environment and interpret underlying issues.

UNIT III CONTEMPORARY ISSUES AND CHALLENGES IN URBANISM 9

Introduction to various contemporary issues that influence urbanism such as globalisation, environmental degradation and pollution, imageability and identity, digital revolution, splintering urbanism, privatization of the public realm, climate change, etc.

UNIT IV URBAN INTERVENTIONS: CONTEMPORARY PROCESSES 9

Contemporary processes and digital tools in urban design. Place-making in digital age. Participative design and community engagement. Restructuring the urban realm, urban conservation and regeneration policies. Suitable case studies for all the above.

UNIT V URBAN INTERVENTIONS: EMERGING CONCEPTS AND STRATEGIES 6

Landscape urbanism. Transit-oriented development and walkability. Net-zero Cities. Sustainable cities programme. Resilient cities. Smart Cities. Shareable cities.

TOTAL: 45 PERIODS

COURSE OUTCOMES

CO1 Awareness of urbanism as a phenomenon.
CO2 An understanding of the complexity involved in addressing contemporary urban issues
CO3 Knowledge of various contemporary processes and urban interventions

REFERENCES

1. Edmund Bacon, ‘Design of Cities’, Penguin Books, 1976.
2. Kevin Lynch, ’Image of the City’, MIT Press, 2017.
3. Jonathan Barnett, ‘An Introduction to Urban Design’, Harper & Row, London, 1996.
4. Christian Norberg Schulz, ‘Genius Loci: Towards a Phenomenology of Architecture’, Rizzoli New York, 1996.
5. Cavallo, R. et al, 'New Urban Configurations', IOS Press, 2014.
6. Henriette Steiner & Maximilian Sternberg, 'Phenomenologies of the City: Studies in the History and Philosophy of Architecture', Routledge 2015.
7. Jan Gehl, 'Life between Buildings- Using Public Space', ArkitektensForleg 1987.
8. 'Time Savers Standard for Urban Design', Donald Watson, McGraw Hill, 2005.
9. Malcolm Moore & Jon Rowland Eds, 'Urban Design Futures', Routledge, 2006

CO – PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	-	-	2	-	3	-
CO2	-	-	2	-	3	-
CO3	-	-	2	-	3	-
AVERAGE	-	-	2	-	3	-

3- High 2-Moderate 1-Low

AA3302 ARCHITECTURAL CONSERVATION: POLICIES AND PRACTICE L T P/S C
3 0 0 3

OBJECTIVES

- To introduce the idea of conservation as enhancing quality of life, as effective planning strategy, as means of particularisation of place and as a way to address issues of memory and identity.
- To give an overview of current status of conservation in India and introduce issues and practices of architectural conservation at various levels and scales.
- To give detailed understanding of architectural conservation techniques including materials, decay and preservation.
- To give familiarity about real life conservation projects.

UNIT I INTRODUCTION TO CONSERVATION 9

Understanding Heritage. Types of Heritage. Heritage conservation: Need, Debate and purpose. Defining Conservation, Preservation and Adaptive reuse. Distinction between Architectural and Urban Conservation. International agencies like ICCROM, UNESCO AND their role in Conservation. The role of Archaeological Survey of India. Role of INTACH. Overview of projects.

UNIT III URBAN CONSERVATION AND PLANNING 9

Historic districts and heritage precincts. Norms for conservation of heritage buildings and sites as part of Development Regulations. Central and state government policies and legislations. Financial incentives and planning tools such as TDR (transferable development right). Urban conservation and heritage tourism. Community participation. Urban renewal, urban recycling, brown field project, adaptive reuse. Project implementation processes and framework through case studies.

UNIT III ARCHITECTURAL CONSERVATION PROCESS 9

Listing of monuments. Documentation of historic structures. Assessing architectural character. Historic report. Heritage site management. Guidelines for preservation, rehabilitation and adaptive re-use of historic structures. Disabled access/ services additions to historic buildings.

UNIT IV PRESERVATION OF BUILDINGS 9

Decay of monuments and reasons. Decay and characteristics of materials such as brick, stone, composite masonry, terracotta, mud, lime, wood, timber, iron and steel. Decay mapping. Quantifying techniques. Introduction to structural analysis. Seismic retrofit. Cleaning, restoring and reconstruction of monuments using appropriate techniques and materials.

UNIT V CASE STUDIES 9

Case studies at the national, international and state level conservation projects done by ASI, INTACH and Conservation Architects at various scales with particular emphasis to architectural conservation, material conservation, adaptive reuse.

TOTAL: 45 PERIODS

COURSE OUTCOMES

CO1 An understanding of the need and benefits of conservation at different scales
CO2 Sensitivity and knowledge about the process of architectural conservation
CO3 Knowledge about material aspects of historic buildings and their preservation
CO4 Exposure to various case studies involving conservation

REFERENCES

1. John H. Stubbs, Robert G. Thomson, Architectural Conservation in Asia, National Experiences and Practice, Routledge 2017
2. Bernard Feilden, Conservation of Historic Buildings, 2nd Edition, Butterworth, 1994
3. INTACH, Conservation Briefs
4. Conservation Manual, Bernard Feilden, INTACH 1989
5. A.G.K. Menon ed. Conservation of Immovable Sites, INTACH Publication, N.Delhi Seminar Issue on Urban Conservation.

6. Christopher Brereton, The repair of Historic Buildings. Advice on principles and methods; English Heritage.
7. A Richer Heritage: Historic Preservation in the Twenty – First Century by Robert E. Stipe, University of North Carolina Press 2003.
8. James M. Fitch, Historic Preservation: Curatorial Management of the Built World by University Press of Virginia; Reprint edition (April 1, 1990)
9. M.S.Mathews, Conservation Engineering, Universität Karlsruhe, 1998
10. Ernest Burden; Illustrated Dictionary of Architectural Preservation; McGraw hill 2003
11. J. Stanley Rabun; Structural Analysis of Historic buildings: Restoration, Preservation and Adaptive Reuse; Applications for Architects and Engineers; Wiley 2000
12. Kirk Urwin J.; Historic Preservation Handbook; Mc Graw hill 2003
13. Martin E Weaver; Conserving buildings: Guide to Techniques and materials, Revised Edition; Wiley; 1997

CO – PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	-	-	-	2	3	-
CO2	-	-	-	2	3	-
CO3	-	-	-	2	3	-
CO4			-	2	3	-
AVERAGE	-	-	-	2	3	-

3- High 2-Moderate 1-Low

AA3321 THESIS PHASE I L T P/S C
0 0 6 6

OBJECTIVES

- To facilitate integration of specialised and appropriate knowledge into a design project through research, study, special methodologies, design process and techniques, etc.,
- To complete the study/ research, site selection and analysis, project formulation and requirements for further progress in Thesis Phase II of subsequent semester.

CONTENT

The students will synthesise the areas of knowledge, skills and techniques of a specialised domain of architecture through a thesis project of their choice. This thesis project would be a design project with a strong research component and will be completed over two semesters. The scale of the project could extend from individual site to settlement level.

Proposal for the design project with a possible direction of study and research has to be submitted for approval prior to the commencement of the semester. In Thesis Phase I, the study part of the project will be undertaken.

The project should involve the application of specialised knowledge in domains such as history, theory, design, energy, sustainability, technology, social aspects, digital architecture, urban design, etc.,. The design interventions will be at scales appropriate to the topic and the final project should manifest strong directions in terms of research/ study/ advanced practice.

The project shall desirably have the potential to serve as a starting point for specific area of architectural practice/ consultancy and/ or further research. In this, a master's degree thesis should be innately different from a bachelor's degree thesis.

The progress of work will be reviewed periodically throughout the semester. At the end of the semester for Thesis Phase I, students should have completed all the study and research work, site

selection and site analysis, project formulation and requirements for project. The study sheets, study models, reports, case study drawings, etc., project report summarising the entire work and soft copy of all the work should be submitted for evaluation through Viva Voce Examination.

TOTAL: 90 PERIODS

COURSE OUTCOMES

CO1 Ability to understand the relationship between study and design.
CO2 Ability to study, analyse and conclude on an area of interest
CO3 Depth of knowledge in a particular area that would inform the design project.

REFERENCES:

1. Iain Borden and Kaaterina Ruedi; The Dissertation: An Architecture Student's Handbook; Architectural Press; 2005.
2. John W Creswell; Research design: Qualitative, Quantitative and Mixed Methods Approaches;
3. Linda Grant and David Wang, Architectural Research Methods, John Wiley Sons 2001.
4. Ranjith Kumar; Research Methodology- A step by step guide for beginners; Sage Publications; 2005.
5. Wayne C Booth; Joseph M Williams; Gregory G. Colomb; The Craft of Research, 2nd Edition; Chicago guides to writing, editing and publishing.
6. Richard Coyne, 'Interpretation in Architecture: Design as Way of Thinking', Routledge, 2005.
7. Stephen Bailey, 'Academic Writing: A Handbook for International Students', Routledge, 2011.
8. Adam Sharr, 'Reading Architecture and Culture', Routledge,2012.
9. Vian Ahmed, Alex Opoku, Zeeshan Aziz, 'Research Methodology in the Built Environment', Routledge, 2016.

CO – PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	2	-	-	-
CO2	3	3	2	-	-	-
CO3	3	3	2	-	-	-
AVERAGE	3	3	2	-	-	-

3- High 2-Moderate 1-Low

AA3322 URBAN ENVIRONMENT DESIGN STUDIO L T P/S C
0 0 10 10

OBJECTIVES

- To enable architectural design in the context of the city.

CONTENT

The studio will focus on architecture as being shaped by and shaping the urban context. The process of architectural design would be seen along with the aspects such as nature of cities, urban morphology, history, place, density, society, public realm, economy, climate and microclimate, ecology, legislation, finance. The design projects would become the site for taking positions on specific issues and developing these ideas to completion.

In the study and overall design stage, focus would be on studying issues related to any one or more of the aspects of the content and come up with design propositions and strategies. This may include

policy, master plan, building design as the case may be based on the project.

In the detailed design stage, the aim is to freeze on the propositions and then develop a part of it to completion in all aspects. The outcome will be a workable solution to any identified aspect of the overall design. It could range from infill design to street character design.

TOTAL : 150 PERIODS

COURSE OUTCOME

CO1 An ability to design buildings as positive additions to the city.

REFERENCES

1. Jonathan Barnett, 'An Introduction to Urban Design', Harper and Row, 1996.
2. Christian Norberg Schulz, ‘Genius Loci: Towards a Phenomenology of Architecture’, Rizzoli New York, 1996.
3. Cavallo, R. et al, 'New Urban Configurations', IOS Press, 2014.
4. Henriette Steiner & Maximilian Sternberg, 'Phenomenologies of the City: Studies in the History and Philosophy of Architecture', Routledge 2015.
5. Jan Gehl, 'Life between Buildings- Using Public Space', ArkitektensForleg 1987.
6. 'Time Savers Standard for Urban Design', Donald Watson, McGraw Hill, 2005.
7. Malcolm Moore & Jon Rowland Eds, 'Urban Design Futures', Routledge, 2006

CO – PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	1	-	-	-	3	2
AVERAGE	1	-	-	-	3	2

3- High 2-Moderate 1-Low

AA3311 **INTERNSHIP TRAINING** **L T P/S C**
X X X 2

OBJECTIVES

- To help in developing depth of knowledge and inquiry in any one of a chosen area of specialty in architecture.
- To enable interacting with practicing architects, allied professionals, researchers and organisations working in the field of speciality in architecture.

CONTENT

The students will undertake the Internship Training in any organisation engaged in activities relating to a specialised area of architecture for a period of 4 weeks. The Internship Training is expected to make awarehow specific areas in architecture can be pursued to depth in the realm of practice and research. The Internship Training can thus be in any architectural practice/ research organisation/ university, etc., where there are such pursuits. Through the Internship Training, the students could obtain mastery in a specific area of practice or research. The students may also utilise the Internship Training to strengthen their ability to do Thesis in the subsequent semester.

The students are expected to complete the Internship Training in the Summer Vacation between second and third semesters, before the commencement of the third semester, and enroll for the course in the third semester. The students shall submit an Internship Training Report, on or before the last working day of the third semester. The students shall be evaluated on the basis of the Report submitted, through a Viva-Voce Examination, as part of the End Semester Examinations of the third semester.

COURSE OUTCOMES

CO1 Additional knowledge and exposure with respect to specific areas of architecture for pursuing practice or independent research.

CO2 Ability to interact with others for constructive and holistic output.

CO – PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	1	-	1	-	-	-
CO2	1	-	3	-	-	-
AVERAGE	1	-	2	-	-	-

3- High 2-Moderate 1-Low

AA3421 **THESIS PHASE II** **L T P/S C**
0 0 16 16

OBJECTIVES

- To facilitate integration of specialised and appropriate knowledge into a design project through research, study, special methodologies, design process and techniques, etc.,
- To complete the design part of the thesis project that will apply the study/ research completed in the Thesis Phase I of the previous semester.

CONTENT

In Thesis Phase II, the students will undertake the design part of the project and work towards incorporating the study and research completed in the previous semester through appropriate processes/ methodologies/ techniques.

The progress of work will be reviewed periodically throughout the semester.

At the end of the semester for Thesis Phase II, students should have completed the design part in such a manner that not only does it qualitatively and quantitatively demonstrate the application of the research, but it is also complete in all respects as a design project.

The design approach sheets, optional design process models, methodologies and techniques, design presentation sheets, final model, detailed drawings based on the research component, project report summarising the entire thesis work and soft copy of all the work should be submitted for evaluation through Viva Voce Examination

TOTAL: 240 PERIODS

COURSE OUTCOMES

CO1 Ability to integrate particular areas of focus/ study through methodologies/ techniques/ skills into the design project.

REFERENCES

1. Linda Grant and David Wang, 'Architectural Research Methods', John Wiley and Sons, 2013.
2. Igor Marjanović, Katerina Rüedi Ray, Lesley NaaNorleLokko, 'The Portfolio - An Architecture Student's Handbook', Routledge, 2015.

CO – PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	2	2	2	2	2	3
AVERAGE	**2**	**2**	**2**	**2**	**2**	**3**

3- High 2-Moderate 1-Low

AA3001 EXPLORATIONS IN ARCHITECTURAL FORM L T P/S C
2 0 1 3

OBJECTIVES

- To inform about aspects, concepts and methods related to some contemporary architectural design processes.
- To enable use of contemporary processes in order to generate architectural form for specific design situations.

UNIT I DIAGRAMMING 11

Introduction to diagramming and its history. Traditional diagrams. Contemporary diagramming processes as tool to creative interpretation and design of architectural form.
Simple exercises in diagramming.

UNIT II SHAPE GRAMMAR AND FRACTALS 11

Introduction to shape grammar and its applications. Introduction to Fractals. Examples from nature and built environment. Types of fractals. Fractal creation, generator and initiator, direction and proportion.

Simple design exercises in shape grammar and fractals.

UNIT III EVOLUTIONARY ALGORITHMS 11

Introduction to evolutionary algorithms. Evolutionary art. Optimisation. Synthesis of topology, geometry and component properties of a structure using genetic algorithm.
Simple design exercises based on evolutionary algorithm.

UNIT IV PARAMETRIC DESIGN 12

Introduction to parametric design. Concept of scripting. Simple design exercises in parametric design

TOTAL:45 PERIODS

COURSE OUTCOMES

CO1 Familiarity with some basic contemporary processes of architectural design.
CO2 Ability to explore architectural form through contemporary processes

REFERENCES

1. Mark Garcia, 'The Diagrams of Architecture', Wiley, 2010.
2. Jane Burry, Mark Burry, 'The New Mathematics of Architecture', Thames and Hudson, 2012.
3. Peter Szalapaj, 'Contemporary Architecture and the Digital Design Process', Architectural Press, 2005.
4. Bovill. C, 'Fractal Geometry in Architecture and Design', Birkhauser, Boston, 1996.
5. Stephen Todd and William Latham, 'Evolutionary Art and Computers', Academic Press, 1999.
6. Melanie Mitchell, 'An Introduction to Genetic Algorithms', MIT Press, 1998.

CO – PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	-	-	**1**	-	-	**1**
CO2	-	-	**3**	-	-	**3**
AVERAGE	-	-	2	-	-	2

3- High 2-Moderate 1-Low

AA3002 ARCHITECTURE AND CRITICAL THEORY L T P/S C
3 0 0 3

OBJECTIVES

- To introduce the idea of architecture as enmeshed in society and a product of larger socio-cultural processes, and not as autonomous object within a hermetically sealed discipline.
- To introduce the various interdisciplinary critical theories and explain their interpretation of architecture.

UNIT I INTRODUCTION 6

Definition of theory - Architectural theory and its nature, purpose and its relation to practice - overview of some traditional architectural theories- context for the rise of more critical theories in architecture – Introduction to Critical Theory- Architecture and Critical Theory.

UNIT II POWER AND GENDER IN ARCHITECTURE 9

Definition of power- Forms of power- ideas of power and society, power-knowledge-postcolonialism-Colonialism in India as a form of dominance- architecture and urbanism of colonialism in India- Indo-Saracenic architecture- New Delhi as part of imperial vision- Power in the built environment at various scales- Case studies in the contemporary world- Introduction to the idea of gender and space- Case studies.

UNIT III PLACE AND ARCHITECTURE 9

Modernity, modern architecture and issues of particularity, place and context - Critical Regionalism and architectures of resistance- Phenomenology in architecture- placemaking.

UNIT IV MEANING IN ARCHITECTURE 12

Architecture as communication and representation- introduction to linguistic concepts of semiotics, structuralism, post structuralism and deconstruction- debates on modern, postmodern and deconstructivist architecture with reference to these concepts- Conditions of late capitalism- Society of spectacle- Architecture as spectacle and seduction.

UNIT V ARCHITECTURE IN THE AGE OF GLOBALISATION AND DIGITAL TECHNOLOGY 9

Influence of globalisation and digital revolution on architectural processes- global/ regional debates-contemporary issues in architecture in India.

TOTAL: 45 PERIODS

COURSE OUTCOMES

CO1 The students would gain an understanding of architecture as an integral production of society as well as engage in critical thinking to interpret architecture

CO2 The students' awareness through this course would inform their future practice/ research/ teaching

REFERENCES

1. Anthony D. King, Colonial Urban Development, Routledge & Paul, London, 1976
2. Christian Norberg Schulz- Towards a Phenomenology of Architecture, Rizzoli New York, 1980
3. Guy Debord. Society of Spectacle,
4. Harry Francis Mallgrave and David Goodman, An Introduction to Architectural Theory- 1968 to the present, Wiley Blackwell 2011
5. Ian Borden & Jane Rendell,(ed), Intersections, Routledge 2000
6. Jane Rendell, Barbara Penner, Iain Borden, Gender Space Architecture, Routledge, 2000
7. Kate Nesbitt, Theorizing a New Agenda for Architecture, Princeton Architectural Press, 1996
8. Kim Dovey, Framing Places: Mediating Power in Built Form, Routledge 1999.
9. Michael Hays (ed) Architectural Theory since 1960,MIT Press, 2000
10. Neil Leach (ed) Rethinking Architecture, Routledge 2000
11. Neil Leach, Anaesthetics of Architecture, MIT Press 1999,

12. Paul Allan Johnson,Theory of Architecture, Routledge 2000
13. Thomas Metcalf, An Imperial vision, Oxford, 2002
14. William J. Mitchell, City of Bits: Space, Place and the infobahn, MIT Press, 1996

CO -PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	2	3	1	-	1	2
CO2	2	3	1	-	1	2
AVERAGE	2	3	1	-	1	2

3- High 2-Moderate 1-Low

AA3003 ENVIRONMENTAL PSYCHOLOGY L T P/S C
3 0 0 3

OBJECTIVES

- To give introduction to the realm of environmental psychology.
- To introduce interdisciplinary social science approaches and to explore ways that people experience environments and make decisions about them.

UNIT I INTRODUCTION TO ARCHITECTURAL PSYCHOLOGY 9

Introduction to the discipline, its importance in the field of architecture. Understanding the principle of psychology- Form, perception, attention, concepts, types of concepts, physical settings and varied emotions. Creative Thinking: Process of creativity, visual and creative thinking. Types of thinking- directed thinking, convergent, divergent. Articulation of masses and spaces, sense and sensation modalities. Language of architecture and its role in creativity, like rhythm, harmony, balance and other visual traits.

UNIT II ENVIRONMENTAL RESPONSE 9

Environmental variables-fixed feature variable, semi-permanent feature variable, ambient feature variable and human comportment, human adaptation to the given environment, collective behaviour and spatial orders, effects of colour and behaviour in built environment

UNIT III CONCEPT OF BEAUTY AND HUMAN ATTITUDE 9

Philosophies of beauty, aesthetics and physio -psychological association to it and the human mind, simulated by 'pull' and 'push' factors of the environment physical manifestation and emotional impact attitudes towards typical physical settings form, space and attitude relations.

UNIT IV APPLICATION OF PSYCHOLOGY IN ARCHITECTURE DESIGN 9

Evaluation of the satisfactory levels of a residential building. Parameters to provoke desired emotions in the built environment application of the knowledge in the design of a residence, community, neighbourhood in all stages of design.

UNIT V PSYCHOLOGY OF SUSTAINABLE BEHAVIOR / GREEN INTERVENTIONS 9

The green organizational imperative. Green work performance. The psychology of going green. Green recruitment, development and engagement. Maslow's Hierarchy of Needs. Herberg's Theory. The Cycle of organisational Change and Progression. Challenges to sustainability and participation.

TOTAL: 45 PERIODS

COURSE OUTCOME

CO1 Understanding the principle of psychology in field of environmental Architecture

CO2 Ability to understand the linkage between form, space and attitude

CO3 ability to evaluate whether a building is at a sufficient level
CO4 Knowledge of the changes and difficulties in participation and sustainability.

REFERENCES

1. Bakker, A.B. and Leiter, M.P. 'Work Engagement; A Handbook of Essential Theory and Research', Psychology Press, 2010.
2. Canter D.V and Lee.T,'Psychology and the Built Environment', Architectural Press, London, 1974.
3. Hall E.T, 'The Hidden Dimension',Anchor, 1990.
4. Kayem,S.M., 'Psychologyin relation to design', Dowden, Hutchinson and Ross, 1973.
5. Morgan T. of Clifford, 'Introduction to Psychology', Tata McGraw–Hill Publications, New York, 1983.
6. Proshansky. H.M, 'TheField of Environmental Psychology: Securing its Future', Wiley, 2002.
7. D. Stokols and I. Altman, 'Handbook of Environmental Psychology', New York, John Wiley and Sons, 1987.
8. Proshansky. H.M, Ittleson. W.H, Rivlin. L.G, 'Environment Psychology- People and Their Physical Settings', New York, Holt, Rinchatand Winston, 1976.

CO -PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**
CO1	3	-	-	-	-	2
CO2	-	-	-	3	-	-
CO3	-	3	-	-	-	2
CO4	-	-	3	-	-	-
AVERAGE	3	3	3	3	-	2

3- High 2-Moderate 1-Low

AA3004 ARCHITECTURAL LIGHTING L T P/S C
3 0 0 3

OBJECTIVES

- To inform about daylight and its use in buildings.
- To give knowledge about electric lighting in interiors and urban lighting.
- To give exposure to lighting research.

UNIT I DAYLIGHT 7

Daylight – properties and qualities. Effects of daylight on users and subjective impressions. Means of daylight in built environment. Types of Fenestrations. Issues in integrating daylight in low rise and high rise buildings. Principles of lighting design. Lighting concepts. Case studies from architects' and lighting designers' works. Examples – Louis Kahn, Philip Johnson, Mies van der Rohe, Richard Kelly, Tadao Ando, Sir Norman Foster.

UNIT II DAYLIGHT INTEGRATION IN BUILDINGS 11

Exercises on optimisation of fenestration. Daylight design of a space or a building. Varied climatic context. Physical models / software. Conformity to Byelaws, standards.

UNIT III ELECTRIC LIGHTING IN INTERIORS 11

Sources of electric lighting. Luminaires- types and applications, design and optimisation. Energy efficient strategies. Integration of daylight and electric lighting using physical models / software.

UNIT IV URBAN LIGHTING 7

Elements of urban lighting. Street lighting, city lighting. Lighting the building exteriors: concepts, decorative and accent, etc. Issues in urban lighting – energy, light pollution, safety and security.

UNIT V LIGHTING RESEARCH 9

Introduction to lighting research, need and issues. Types of lighting research – qualitative, quantitative, empirical, case study methods. Review of research papers on lighting.

TOTAL: 45 PERIODS

COURSE OUTCOME

CO1 Knowledge about lighting in buildings and urban spaces

CO2 Awareness of different types of lighting research

REFERENCES

1. Sandy Isenstadt, Margaret Maile Petty, Dietrich Neumann, 'Cities of Light: Two Centuries of Urban Illumination', 1st Edition, Routledge, New York, 2014.
2. Schulte-Römer, Nona, Dannemann, Etta and Meier, Josiane, 'Light Pollution – A Global Discussion', Leipzig: Helmholtz Centre for Environmental Research GmbH – UFZ, 2018.
3. Emily Dufner, VasilikiMalakasi, Simone Collon, Dan Lister, 'Lighting in The Urban Age: Meaningful Design For Cities, People & Places', ARUP.
4. Zumbotel, 'The Lighting Handbook', 6th Edition, 2018.
5. Megan Charnley, Tom Jarvis, 'In the Shade: Lighting Local Urban Communities', Research Project, Royal College of Art, London, 2012.
6. Bureau of Street Lighting, 'Design Standards and Guidelines', Department of Public Works, Los Angeles, 2007.
7. Casper Laing Ebbensgaard, 'Rethinking Urban Lighting: Geographies of Artificial Lighting in Everyday Life', PhD Thesis, 2016.
8. Stephen Atkins, Sohail Husain and Angele Storey, 'The Influence of Street Lighting on Crime and Fear of Crime', Crime Prevention Unit Paper No. 28, London, 1991.
9. SP 72: National Lighting Code 2010, Bureau of Indian Standards.

CO – PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	-	-	**1**	-	-	**1**
CO2	-	-	**3**	-	-	**3**
AVERAGE	-	-	2	-	-	2

3- High 2-Moderate 1-Low

AA3005 PERFORMANCE EVALUATION OF BUILDINGS L T P/S C
2 0 1 3

OBJECTIVES

- To facilitate simulation and auditing techniques for assessing energy performance, environmental response and impact of built form.
- To give knowledge about solar shadow modeling tools, heat flow analysis, light simulation tools, modelling of ventilation, fire dynamics, sizing of passive solar features, estimation of energy conservation.

UNIT I ENERGY AND THE PERFORMANCE OF BUILDING 9

Need for performance analysis of buildings - Investigation and assessment, energy audit procedures - Design investigations - Basics of thermal comfort, solar shading/access/ control, day lighting, acoustics air movement etc.- Energy conservation measure calculations - Modelling systems: cognitive, empirical and analytical assessment of buildings - Architectural Computation and performance audit. Introduction to ECOTECT.

UNIT II MODELLING OF THE BUILDING FORM 15

Modelling the Building form - Parametric and empirical building simulation - Factors affecting accuracy of energy model - Thermal performance criteria of buildings - Envelope considerations, climatic analysis, weather data-Heating and cooling systems modelling, ventilation systems modelling - Energy use analysis through open source software such as EQUEST. Integration of ECOTECT with BIM, RAPID ENERGY MODELLING -Modelling and performance simulation of existing buildings – eQuest and Sketch Up + Open Studio + Energy Plus or any free wares which are approved by Department of Energy, USA / India as simulation software Design builder, IES VE, TRNSYS etc.

Simple exercises in the above.

UNIT III POST OCCUPANCY EVALUATION OF BUILDINGS 9

Purpose and components of Post occupancy evaluation (POE), Building performance bench marks, Occupant satisfaction, Indoor air quality, PPD and PMV analysis, Techniques and methods for post occupancy evaluation, assessing existing buildings based on their energy and water usage.

Case Studies and exercises in the above.

UNIT IV SEMINAR AND CASE STUDY PRESENTATION 12

Case study presentation of students on performance evaluation of a small residential / office typology in different climate zones- on how to integrate passive design and show results of how energy efficiency has been achieved - Real time data collection using physical instruments and paper publication to journals.

TOTAL: 45 PERIODS

COURSE OUTCOME

CO1 Knowledge about environmental assessment methods, audit and simulation techniques, energy modelling skills.

CO2 Ability to add value to architectural design processes

REFERENCE

1. 'Teaming for Efficiency: Technologies, Design, Performance Analysis and Building Industry Trends', American Council for an Energy-Efficient Economy, 2002.
2. James P. Waltz, 'Computerized Building Energy Simulation Handbook', Fairmont PR, 1999.
3. Joseph Clarke, 'Energy Simulation in Building Design', Routledge, 2007.
4. GiulianoDall'O', 'Green Energy Audit of Buildings: A Guide for a Sustainable Energy Audit of Buildings', Springer, 2013.
5. ASHRAE Press, 'The ASHRAE Green Guide', Butterworth- Heinemann, 2006.
6. Energy Conservation Building Code of India - User manual, 2017.
7. MoncefKrarti, 'Energy Audit of Building Systems', CRC Press, 2010.
8. Clarke.J.A., 'Energy Simulation in Building Design', CRC Press, 1985.
9. ESRU, 'The ESP-r System for Building Energy Simulation User Guide Version 10 Series', University of Strathclyde, 2002.
10. Kabele.K, 'Modelling and Analyses of Passive Solar Systems with Computer Simulation', in Proc. Renewable Energy Sources, PP. 39 – 44, Czech Society for Energetics Kromeriz, 1998 (in Czech)

CO-PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	2	-	1	3	-	-
CO2	2	-	1	3	-	-
AVERAGE	2	-	2	3	-	-

3- High 2-Moderate 1-Low

AA3006 **SOFT SKILLS** **L T P/S C**
2 0 1 3

OBJECTIVES:

- To give introduction to the soft skills and personality
- To give understanding of and enable better interpersonal communication.
- To apprise of aspects of organisational communication and develop skill in it.
- To enable skill in reading and writing.

UNIT I INTRODUCTION TO SOFT SKILLS AND PERSONALITY 9

Introduction to Soft Skills. Understanding of self. Self-awareness, self- management and Self Development. Values. Attitude. Positive Thinking and optimism. Confidence and excellence. Developing perception. Patience, persistence and flexibility. Empathy and Emotional Intelligence. Types of stress and stress management. Time Management and overcoming procrastination. Career planning.

Exercises and case studies for the various topics.

UNIT II INTERPERSONAL COMMUNICATION 9

Classification and types of Communication. Verbal and non-verbal communication. Formal and informal communication. Barriers in communication.

Listening Skills, Types of Listening. Enhancing listening. Understanding context of words.

Responding. Speaking. Self development through speaking.

Nonverbal Communication. Body language and etiquette. Proxemics. Understanding of cultural, social and economic diversity and adapting to others.

Exercises and case studies for the various topics.

UNIT III ORGANISATIONAL COMMUNICATION 12

Group Communication. Organisational Communication. Communication Breakdown. Conflict Management. Negotiation Skills. Meeting Management. Team Building and Team work. Leadership Skills. Emotional intelligence. Critical Thinking.

Speeches and debates, Combating nervousness and anxiety, Patterns and Methods of Presentation, Oral presentation- Planning and preparation, Making effective presentation. Speaking for various occasions at different scales. Public speaking. Group Discussions.

Exercises for the various topics.

UNIT IV ADVANCED READING AND WRITING SKILLS 15

Critical reading and understanding. Reviewing articles and books. Technical explanatory writing. Report writing for project. Structure of scientific/ technical papers. Writing papers for journals and conferences.

Assignments for the various topics.

TOTAL: 45 PERIODS

COURSE OUTCOME

CO1 Awareness of importance of soft skills.
CO2 Knowledge and skill in interpersonal communication.
CO3 Knowledge and skill in organisational communication.
CO4 Competency in reading and writing.

REFERENCES

1. Soft Skills, K.Alex, S.Chand, 2010
2. Soft Skills, Hariharan S, Sundararajan N, Shanmugapriya S.P, MJB Publishers 2010.
3. The ACE of Soft Skills, Gopalaswamy Ramesh, Mahadevan Ramesh, Pearson 2010.

4. Understanding Interpersonal Communication, Richard West and Lynn H.Turner, Cengage Learning, 2010.
5. Interpersonal Communication, Steven A. Beebe, Susan J. Beebe, Mark V. Redmond, Pearson 2011.
6. Business Correspondence & Report Writing, R. C. Sharma , Krishna Mohan,Tata McGraw Hill, 5th Edition 2017
7. How to Research and write a scientific paper, Robert A. Day, Barbara GasteCambridge University Press 2012.

CO-PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	-	-	2	-	2
CO2	2	-	-	2	-	2
CO3	-	-	-	-	-	3
CO4	-	-	2	-	-	-
AVERAGE	3	-	2	3	-	2

3- High 2-Moderate 1-Low

AA3007 ANTHROPOLOGY AND ARCHITECTURE L T P/S C
3 0 0 3

OBJECTIVES:

- To understand the relationship between society and the making of the built environment.
- To understand phenomenology and the role of meaning in built form.
- To look at place making from the architectural as well as urban design point of view.

UNIT I RELATIONSHIP BETWEEN CULTURE, SOCIETY, ANTHROPOLOGY AND ARCHITECTURE 6

Concepts of culture, society, politics and anthropology – relation between society and built environment – introduction to cultural anthropology view of architecture.

UNIT II ANTHROPOLOGY OF TRADITIONAL ARCHITECTURE 10

Architecture as a Process – kinship and house societies – perceptions of built form – conceptions of space – symbolism and technology – study of the above through case study of traditional architecture in India, Asia and Africa.

UNIT III ANTHROPOLOGY AND PLACE MAKING 15

Conditions of modernity –Fragmentation of society – Heidegger and notions of dwelling – C Noeberg Schultz and notions of Genius Loci Rapoport and studies on the meaning of built environment – Joseph Rykwert and the idea of house – Bollnow and idea of space – Jan Pieper and the notions of sacred space.

UNIT IV AN OVER VIEW OF URBAN ANTHROPOLOGY 6

Meaning of urban studies and urban anthropology – role of cities – urban ethnography, primary units, major components and units of integration – anthropology and contemporary urban issues.

UNIT V SEMINAR 8

Students would make presentations exploring the relevance and impact of anthropological studies on contemporary architecture and design through readings/case studies. The proposal must be discussed with course faculty prior to presentation.

TOTAL: 45 PERIODS

COURSE OUTCOMES

CO1 A comprehensive understanding of architecture and urbanism as expressions of particular societies in time and place.

REFERENCES

1. Claire Melhuish (ed); Architecture and Anthropology – AD Vol 66 No 11/12 Nov - 1996
2. Edwin James; Anthropology of the City; Prentice Hall; 1977.
3. F Bollnow; Mann, Bensch and Raum, Stuttgart; 1963.
4. J Carstern and S H Jones; About the house: Levi Strauss and Beyond; Cambrige University Press; 1955.
5. Joseph Rykwert – Idea of a Town: The Anthropology of Urban Form in Rome; 1976.
6. Joseph Rykwert; On Adams house in Paradise; MIT Press 1987
7. Nold Egenter; The review of the Primitive in Architecture – Architectural Anthropology – Research Series Vol. I and II; Structura Mundi; 1992 and 1996.
8. Roxanna Wasterson; The living House Anthropology of Architecture in S E Asia; Oxford Press.

CO – PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	1	2	1	-	3	2
AVERAGE	1	2	1	-	3	2

3- High 2-Moderate 1-Low

LN3051 LANDSCAPE URBANISM L T P/S C
3 0 0 3

OBJECTIVE:

- To analyze the role of Landscape Urbanism – theory (texts) & practice (projects) in forming the contemporary city. To understand the evolution of a new urban morphology for contemporary cities adopting new models & strategies based on the Landscape of the city.

UNIT I LANDSCAPE URBANISM – AN INTRODUCTION 5

Background(what & why), the emergence of Landscape urbanism, characteristics, revaluating landscape, history and driving forces, Landscape in practice: Defining competitions of landscape urbanism

UNIT II LANDSCAPE (SUB) URBANISM IN THEORY AND PRACTICE 10

LU – a school of thought, Smart growth and LU, New Urbanism, Green Urbanism, From Critical Regionalism to Critical Pragmatism

Practical limitations to innovation – Case study – The Wugong Urban Water (WUW) Landscape Structure Plan, The WUW project in relation to theory

UNIT III LANDSCAPE URBANISM –PLANNING 6

Performative Processes – process cycles, processes engaged in design, a democratic urban environment, processes of planning – Surface Strategies – Contemporary Positions – Network city, New pragmatism, philosophy of world complexity, ecological design media – Evolution of Planning Ideals – from the modern to the contemporary, the rise of landscape urbanism

UNIT IV SUSTAINABLE(SU) & ECOLOGICAL URBANISM (EU) 12

SU- Urban design with nature – The case for sustainable urbanism – Emerging thresholds – Sustainable neighborhoods – Time: The 2030 Community Challenge – Implementing sustainable urbanism – Rethinking cities for the future – Case studies EU- Historic roots and current trends,

propositions and principles for the design of resilient cities, Cities – as habitats, part of the natural world, Urban ecosystems, The future of Urban Design.

UNIT V ASIAN LANDSCAPE URBANISM 12

Emerging challenges, Relationship between Asian Urbanism and Landscape Urbanism – social & cultural aspects of Asian Urbanism – Landscape Urbanism in India – case studies Hampi, Goa

TOTAL: 45 PERIODS

COURSE OUTCOME

CO1 Sensitivity with respect to the significance of landscape urbanism in make cities livable

REFERENCES:

1. Charles Waldheim, The Landscape Urbanism Reader (paperback)
2. Douglas Farr, Sustainable Urbanism – Urban design with nature, Wiley, John & Sons, Incorporated, November 2007.
3. http://issuu.com/inde/docs/la31_surat/7?e=0
4. http://issuu.com/inde/docs/presentation_hampi_isola/1?e=0
5. http://www.ibs.or.jp/sites/default/files/5_publish/09-India.pdf
6. Jan Gehl, Cities for people, Copyrighted material, September 6, 2010|ISBN-10:159726573X |ISBN-13:978-1597265737, Edition:2. Landscape practice Global Leader, Woods Bagot PO Box 58041, Dubai, UAE.
7. Landscape urbanism – large-scale architecture, ecological urban planning or a designerly research policy, GUNILLA LINDHOLM Senior lecturer, landscape architect, Department of Landscape Architecture, SLU, Alnarp, Sweden – Research paper
8. Mohsen Mostafavi, Ecological Urbanism, Harvard University, Graduate school of design, Lars Muller Publisher.
9. Peter Calthorpe, Urbanism in the age of climate change, Publication Date: June 1, 2013 |ISBN-10:159726721X| ISBN-13: 978-1597267212
10. Richard Weller, BOOM TOWN 2050 Scenarios for a rapidly growing city, UWA Publishing 2009.
11. Steven Velegrinis, Flux-scape: Emerging Challenges of Asian (Landscape) Urbanism,
12. Tigran Haas (Editor), Sustainable Urbanism and Beyond – Rethinking cities for the future, Rizzoli, NY, USA.

CO – PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	1	2	1	-	3	2
AVERAGE	1	2	1	-	1	2

3- High 2-Moderate 1-Low

AA3008 EMERGING PRACTICES IN HOUSING L T P/S C

3 0 0 3

OBJECTIVES

- To give an outline of the evolution of housing to its present forms.
- To give familiarity with respect to redefinition of contemporary housing within the contexts of multicultural cities due to globalisation.

UNIT I INTRODUCTION 9

Introduction to housing, from its industrial beginnings in London and Paris to New York City's Lower East Side and the 20th century designs of Le Corbusier, Antonio Sant'Elia, and Mies van der Rohe. Investigation of contemporary life and its influence on space and architecture. Globalisation and influences on economy. Alternate housing solutions: Commune, Co Housing, Cooperatives, etc.

UNIT II SINGLE FAMILY, MULTI FAMILY HOUSING 9

Review of latest developments in single family and multifamily housing by examining the works of WielArets, Shigeru Ban, Ben van Berkel, KeesChristiaanse, Philippe Gazeau, Frank O. Gehry, Steven Holl, Hans Kollhoff, MorgerandDegelo,, Jean Nouvel, KasOosterhuis, MVRDV.

UNIT III HIGH DENSITY HOUSING 7

Issues and concerns of high density housing. Review of the current state of high density houses.Perspectives and future developments through a study of a few international projects.

UNIT IV NEW FORMS OF LIVING AND HOUSING IN THE DIGITAL ERA 7

Hyper Housing. Multi-cultural Housing.Lab rooms and cyber homes. Network housing. Hybrid buildings. Individual sheltered residences. Residence cities and bio homes for senior citizens. Works of UN Studio, FOA, OMA.

UNIT V CONTEMPORARY HOUSING IN THE INDIAN CONTEXT 13

Social and economic changes in India in the 21st century. Impact on housing form and its evolution. Housing policies today. Case studies of government, market oriented projects and innovations by architects for the current scenario.

TOTAL:45 PERIODS

COURSE OUTCOMES

CO1 Sensitivity to the various forces that shape the form of housing today.

CO2 Knowledge about the latest development, issues and design strategies governing housing at national and international level.

REFERENCES

1. Jaime Salazer, Manuel Gausa, 'Single Family Housing', Birkhauser Verlag AG, 2005.
2. Vicente Guallart, 'Sociopolis: Project for a City of the Future', ACTAR, 2004.
3. Jingmin Zhou, 'Urban Housing Form', Architectural Press, 2005.
4. Adrienne Schmitz, 'Multifamily Housing Development Handbook', Urban Land Institute, 2000.
5. CarlesBronto, 'Innovative Public Housing', Links Internacional, 2005.
6. Rahul Mehrotra, 'Architecture in India since 1990', HatjeCantz, 2011.

CO – PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	-	-	**1**	-	**1**	-
CO2	-	-	**3**	-	**3**	-
AVERAGE	-	-	2	-	2	-

3- High 2-Moderate 1-Low

AA3009 APPROPRIATE TECHNOLOGIES AND SUSTAINABLE CONSTRUCTION L T P/S C
3 0 0 3

OBJECTIVES

- To give knowledge and skills to enable the facilitation and transformation of places and spaces where culture and technology are in a state of rapid change and resources are scarce.
- To give familiarity with self-help techniques of construction, adaptation, repair and management in order to give understanding about what is involved in sustainable construction of domestic and community architecture.

UNIT I INTRODUCTION 7

Architecture and the survival of the planet. Assessing patterns of consumption and their alternatives. Profit and politics. Natural building movement. New context for codes and regulations

UNIT II DESIGN PRINCIPLES 11

Principle 1: Conserving energy; Principle 2: Working with Climate; Principle 3: minimising new resources; Principle 4: respect for users; Principle 5: respect for site; Principle 6: Holism. Illustrated with examples.

UNIT III SUSTAINABLE CONSTRUCTION 7

Design issues relating to sustainable development including site and ecology, community and culture, health, materials, energy, and water. Domestic and Community buildings using self help techniques of construction. Adaptation, repair and management.

UNIT IV SYSTEMS, MATERIALS AND APPLICATIONS 11

Adobe, Cob, Rammed Earth, Modular contained earth, light clay, Straw bale, bamboo, earthen finishes. Sustainability. Adaptability to climate. Engineering considerations and construction methods. Waste as a resource. Portable architecture.

UNIT V BEST CURRENT PRACTICE 9

Case studies demonstrating best current practice in a scale ranging from small dwellings to large commercial buildings drawn from across the world.

TOTAL: 45 PERIODS

COURSE OUTCOME

CO1 An understanding on the needs of alternative technologies in buildings

CO2 Exposure to sustainable materials and construction

REFERENCES

1. Brenda and Robert Vale, 'Green Architecture: Design for a sustainable future', Thames and Hudson, 1996
2. Lynne Elizabeth and Cassandra Adams, 'Alternative Construction: Contemporary Natural Building Methods', Wiley; 1 edition, 2005
3. Victor Papanek, 'The Green Imperative', Thames and Hudson, 1995
4. Steven Harris and Deborah Berke, 'Architecture of the Everyday', Princeton Architectural Press, 1998
5. PilarEchavarria, 'Portable Architecture- and unpredictable surroundings', Page One Publishing Pvt. Ltd., 2005

CO – PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	1	2	3	2	-	2
CO2	1	2	3	2	-	2
AVERAGE	1	2	3	2	-	2

3- High 2-Moderate 1-Low

AA3010 BUILDING SKINS AND SMART MATERIALS L T P/S C
3 0 0 3

OBJECTIVES

- To introduce smart materials for use in architectural design.
- To give familiarity about products that have changeable properties in response to elements.
- To inform about materials and technologies such as LEDs, smart glazing, displays, etc.
- To give introduction to building skins in terms of their performance and functionality, bio inspired facades and interactive surfaces.
- To give familiarity about the methods of fabrication, production and construction for innovation in design.

UNIT I INTRODUCTION 7

Introduction. Innovative Materials. Smart materials in Nature. Current Trends and Developments.

UNIT II NEW AGE MATERIALS I 9

Property Changing Smart Materials. Photochromics, Thermochromics. Electrochromics. Photoadhesives. Electroactive Polymers. Shape Memory Alloys. Energy-exchanging smart materials. Phase change Materials (PCM).

UNIT III NEW AGE MATERIALS II 10

Plastic as a structural material, load bearing plastic spandrel panels, fiberglass plastic application in construction. Matter-exchanging smart materials. Gas/Water storing Smart Materials. Absorbent/Super absorbent Polymers. Bioplastics.

UNIT IV SUSTAINABLE BUILDING SKIN 10

Parameters for designing a sustainable building skin - sun control, natural ventilation, daylighting, connection to outdoors, thermal insulation, moisture control, micro-climate zones, structural efficiency, material choices, potential for energy generation, bio inspired facades, responsive façade, interactive façade.

UNIT V CASE STUDIES 9

Case studies on the innovative applications of smart materials and various building skins in design.

TOTAL: 45 PERIODS

COURSE OUTCOME

CO1 Knowledge about fundamentals of material and current innovations.

CO2 Ability to explore the potential of smart materials in creative designing

CO3 Knowledge about smart material characteristics and methods of material technology that can be translated to innovative approaches to design

CO4 Ability to examine building skin as both giver of character and as part of the performative technology of buildings.

REFERENCES

1. Michelle Addington and Daniel L.Schodek, 'Smart Materials and Technologies in Architecture', Architectural Press, Elsevier, 2004.
2. Axel Ritter,'Smart Materials: In Architecture, Interior Architecture and Design',Birkhauser, 2007.
3. Marinella Ferrara and Murat Bengisu, 'Materials that Change Color: Smart Materials, Intelligent Design', Springer, 2013.
4. Elena Gorb, Yves.J.M.Brechet et al, 'Materials Design Inspired by Nature: Function Through Inner Architecture (RSC Smart Materials)', RSC Publishing, 2013.
5. P. Gruber and S. Gosztonyi, 'Skin in architecture: towards bioinspired facades', https://www.witpress.com/Secure/elibrary/papers/DN10/DN10045FU1.pdf
6. Yeang, K., 'The Green Skykscraper, The Basis for Designing Sustainable Intensive Buildings', Prestel Verlag, Munich, London, New York, 1999.

7. Maggie McIntosh, 'Sustainable Building Skin Design' https://soa.utexas.edu/sites/default/disk/technologies/technologies/09_03_fa_speck_mcintos h_ml.pdf

CO-PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	-	2	-	-	3
CO2	3	-	2	-	-	3
CO3	3	-	2	-	-	3
CO4	3	-	2	-	-	3
AVERAGE	3	-	2	-	-	3

3- High 2-Moderate 1-Low

AA3011 SUSTAINABLE BUILDING SERVICES AND WATER MANAGEMENT L T P/S C
3 0 0 3

OBJECTIVES

- To give knowledge about the importance of water management systems for optimal use and sustainability and give knowledge about the same.
- To give knowledge about designing and managing building services for sustainability.
- To give familiarity about laws and methods that help in the management of resources in a sustainable manner.

UNIT I TRADITIONAL WATER MANAGEMENT SYSTEMS 9

Sources of water. Settlements influenced by water bodies. Traditional water management systems in India and other countries. Examples from history. Issues in current context.

UNIT II WATER MANAGEMENT SYSTEMS 9

Storm water management. Rain water harvesting methods. Calculation of rain water harvesting potential - low rise to urban scale. Issues in water management in Tamil Nadu. Innovative concepts and methods. Case studies. Proposals.

UNIT III POLICIES AND BYELAWS 9

Right to water. Standards, byelaws and Policies. Access to good quality water. Distribution systems. Water efficient strategies in buildings. Sustainable practices. Waste management and disposal systems. Literature review of water management research papers.

UNIT IV CARBON NEUTRALITY 9

Low carbon, zero carbon design principles. Passive and active strategies in Building services. Choice of electrical, HVAC equipment. Energy efficient techniques. Renewable energy integration.

UNIT V CASE STUDIES 9

Online case studies / Visit to high rise buildings. Building services studies – location, optimisation, conformity to LEED India. Green rated buildings – Issues and proposals.

TOTAL: 45 PERIODS

COURSE OUTCOME

CO1: Ability to manage water resources for a building in an optimal and sustainable manner.
CO2: Familiarity with different methods to design and manage building services for sustainability.
CO3: Knowledge about laws and strategies with respect to sustainable building services and resources.

REFERENCES

1. BIS, 'National Building Code 2005', New Delhi, 2005.
2. Fred Hall and Roger Greeno, 'Building Services Handbook', Routledge, 7th edition, 2013.
3. 'Manual on Water Supply and Treatment', CPHEEO, Govt. of India, New Delhi, 2003.
4. AbiudKaswamila, 'Sustainable Natural Resource Management', CBS Publishers Pvt Ltd, India, 2012.
5. John Briscoe, R.P.S. Malik (Ed.), 'Handbook of Water Resources in India: Development, Management, and Strategies', Oxford University Press, 2007.
6. Manual on "Sewerage and Sewage Treatment Systems Part A, Part B &Part C" CPHEEO, Ministry of Urban Development, Government of India, New Delhi, 2013.
7. Ramaswamy R. Iyer, 'Water and the Laws in India', Sage Publications India Pvt. Ltd, 2009.
8. Rangwala, 'Water Supply and Sanitary Engineering (Environmental Engineering)', Charotar, 2016.
9. 'Plumbing Services and Design Guide',Compiled and Published by Institute of Plumbing. F Hall, 'Building Services and Equipment (Part I & Part II)', Routledge, 2016.
10. K. Nageswara (Ed.), 'Water Resources Management: Realities and Challenges', Eastern Book Corpn., 2006.
11. R.N. Athavale, 'Water Harvesting and Sustainable Supply In India', Rawat Publications, 2003.
12. William McDonough, Michael Braungart, 'Cradle to Cradle: Remaking the way we make things', North Point Press, 2002.
13. 'ISO 14067 - CARBON FOOTPRINT- 'Environmental management -- Life Cycle Assessment Principles and Framework', International Organization for Standardization.
14. 'Sustainable Building Design Manual-Volume I and II',TERI Publication.
15. Rakesh Kumar and R N Singh, edited by T.V. Ramchandra, 'Municipal Water and Waste Water Treatment', TERI, 2009.

CO-PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	-	-	-	3	-	-
CO2	-	-	-	3	-	2
CO3	-	-	-	3	-	2
AVERAGE	-	-	-	3	-	1

3- High 2-Moderate 1-Low

AA3012 FACILITIES PROGRAMMING AND MANAGEMENT FOR ARCHITECTURE

L T P/S C
3 0 0 3

OBJECTIVE

- To enable development of capability to plan for and manage various aspects of building so as to give user satisfaction and safety.

UNIT I BASICS OF ARCHITECTURAL PROGRAMMING 7

Introduction to Architectural Programming. Design process stages: analysis, synthesis and evaluation. Framework for information covering the whole problem. Different approaches to architectural programming.

UNIT II BASICS OF FACILITIES MANAGEMENT 11

Principle duties of a facility manager. Business aspects of facilities management. Diverse responsibilities and decision-making processes from building infrastructure to fleet services.

UNIT III FACILITIES DESIGN AND SPACE PLANNING 11

Applications of facilities design in defining the requirements of a project. Developing design strategies, implementing corporate philosophies and methodologies, and understanding the project development process. Flexibility and facilities planning. Optimal space planning and cost minimisation through facility layout.

UNIT IV FACILITY PLANNING AND DECISION SUPPORT SYSTEM 9

Knowledge based facility planning and decision support system. Application of artificial intelligence. Graphical and theoretic approach to multi-floor building design. Facility layout algorithm using graphics. Simulation in facility planning and efficiency analysis

UNIT V FACILITY MANAGEMENT DURING CONSTRUCTION PHASE & HANDOVER 7

Types of facility management options. Functionality of Building Automation systems. Wear and tear of technical installations. Recording operating costs, safety concepts, energy supply and waste management. Service tenders and contracts.

TOTAL: 45 PERIODS

COURSE OUTCOMES

CO1 Familiarity about facilities programming in planning a building

CO2 Understanding of the relation between facilities planning and facilities management and their importance, especially in the context of service-oriented spaces and building types.

REFERENCES

1. Richard Payant, Kathy O. Roper, 'The Facility Management Handbook', AMACOM, 2014.
2. Bernard Lewis and Richard Payant, 'Facility Manager's Maintenance Handbook', McGraw Hills, 2007.
3. Keith Alexander, Brian Atkin, Jan Bröchner, and Tore Haugen, Facilities Management: Innovation and Performance', Routledge, 2004.
4. Eric Teicholz,' Facility Design and Management Handbook', McGraw Hill Professional, 2001.
5. Frank Booty, 'Facilities Management Handbook', Fourth Edition, Elsevier, 2009.
6. William M. Pena , Steven A. Parshall, 'Problem Seeking: An Architectural Programming Primer', 5th Edition, Wiley, 2012.

CO -PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	2	3	-	2	1	-
CO2	2	3	-	2	1	-
AVERAGE	2	3	-	2	1	-

3- High 2-Moderate 1-Low

AA3013 URBAN CULTURAL LANDSCAPES L T P/S C
3 0 0 3

OBJECTIVES

- To give understanding of social and cultural diversity as design generators.
- To introduce tools for documentation and analysis of urban cultural landscapes.
- To introduce the various theories and discourses on urban cultural landscape.
- To give understanding of the complex challenges involved in the practice of conservation of urban cultural landscapes through national and international case studies.

UNIT I DEFINING URBAN CULTURAL LANDSCAPES 9

Introduction to the concept of Urban Cultural Landscape as the result of interplay between natural and built environment and as the generator of Spirit of place - uniqueness of place, peoples and traditions.

Definition of Urban Cultural Landscapes and Historic Urban Landscape as understood in the international framework (Vienna Memorandum, World Heritage Cities Programme, ICOMOS)

UNIT II TOOLS AND METHODS FOR MAPPING CULTURAL LANDSCAPES 9

Tools and methods to delineate, document and analyze the complexity of the urban cultural landscape; Mapping tangible and intangible values (recording oral history and traditional knowledge systems)

UNIT III URBAN CULTURAL LANDSCAPE: THEORIES AND DISCOURSE 9

Introduction to the evolution of theories and discourse on urban cultural landscape.Inclusion of traditional and indigenous cultural values, emphasis on local and lived experience, collective memory, identity, meaning and association, local and traditional knowledge systems, sacred landscape.

UNIT IV URBAN CULTURAL LANDSCAPES: PRACTICE AND CHALLENGES 9

Challenges in managing urban continuity and change: global processes, urbanization and development, economics, changing cities, tourism. Shift from object or monument-centric approach to the notion of 'value' guided by urban values and the economic value of conservation. Shift from expert oriented approach to inter-disciplinary and community-based or people-centric approaches.

UNIT V CASE STUDIES 9

National and International case studies to understand the application of theoretical frameworks and trace the relation between discourse and practice of conservation of urban cultural landscapes

TOTAL: 45 PERIODS

COURSE OUTCOME

CO1 Ability to identify and appreciate the importance of social and cultural diversity
CO2 Ability to document urban cultural landscapes
CO3 Sensitivity to complex challenges involved in urban conservation

REFERENCES

1. Rana P.B. Singh, 'Heritagescapes and Cultural Landscapes', Shubhi Publications, 2011.
2. Mauro Agnoletti, 'Conservation of Cultural Landscapes', CABI, 2006.

CO – PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	2	2	-	3	3
CO2	3	2	2	-	3	3
CO3	3	2	2	-	3	3
AVERAGE	3	2	2	-	3	3

3- High 2-Moderate 1-Low

AA3014 RETROFITTING AND ADAPTIVE REUSE L T P/S C
3 0 0 3

OBJECTIVES

- To introduce the importance of traditional architectural knowledge system for conservation.
- To emphasise need for sustainability of the existing morphology through adaptive reuse in order to provide alternative options in urban renewal with reference to changing market dynamics.
- To enable a better understanding of the structure and fabric of historic structures.

UNIT I TRADITIONAL KNOWLEDGE SYSTEM 7

Traditional Architecture and its associative crafts. Historic City- a product of people, place and time. Architectural Knowledge System as a tool for Conservation.

UNIT I STRUCTURAL SYSTEMS 9

Introduction to construction techniques and structural components in a historic structure. Understanding various types of historic structural systems. Structural analysis of historic structures. Understanding various techniques for structural analysis. Understanding the failure and distress in historic structures and development of new forms. Inspection and diagnosis of structures.

UNIT III THEORY OF MATERIALS 10

Characterisation of materials and compatibility of its usage. Relationship between various historic building materials and historic buildings. Maintenance requirements of building materials. Diagnosis and assessment of defects in building materials by atmospheric elements. Remedial measures. Strengthening of building materials.

UNIT IV RETROFITTING OF BUILDINGS / PROPERTIES AND ADAPTIVE REUSE 10

Urban Renewal – Rehabilitation, Redevelopment and Conservation. Adaptive Re-use, retrofitting, facadism, commodification. Methods and mechanisms.

UNIT V CASE STUDIES 9

Legal framework and administrative aspects, policies and charters. Case studies of proposals for conservation / adaptive reuse from India and abroad. Sustainable development, Brownfield projects, mixed use strategies (examples in Indian and Western context).

TOTAL: 45 PERIODS

COURSE OUTCOME

CO1 Sensitivity with respect to the significance of adaptive reuse and retrofitting with its implications in creating value

REFERENCES

1. Cliff Moughtin, 'Urban Design-Street and Square', Routledge, 2007
2. Edmund Bacon, 'Design of Cities', Revised edition, Penguin, USA, 1976
3. Geoffrey Broadbent, 'Emerging concepts in Urban Space Design', Taylor & Francis, 1995
4. Jon Lang, 'Urban Design- A Typology of Procedures and Products', Routledge, 2017.
5. Wright.A, 'Craft Techniques for Traditional Buildings', BT Batsford Ltd, 1991.
6. Allen G. Noble , 'Traditional Building: A Global Survey of Structural Forms and Cultural Functions', I. B. Tauris, 2007.
7. Kingston Wm Heath, 'Vernacular Architecture and Regional Design: Cultural Process and Environmental Response', Architectural Press, 2009.

CO – PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	1	2	1	-	3	2
AVERAGE	1	2	1	-	3	2

3- High 2-Moderate 1-Low

AA3015 URBAN INFRASTRUCTURE AND MANAGEMENT L T P/S C
3 0 0 3

OBJECTIVES

- To provide basic knowledge on the functions, dynamics, planning and management of urban infrastructure systems.
- To give understanding about the dynamics within and between urban infrastructure systems, and their relation to the built environment and economic development.
- To give knowledge about how to assess the qualities of infrastructure systems in terms of vulnerability, sustainability, equity and efficiency.

UNIT I INTRODUCTION, TRANSPORTATION, POWER AND COMMUNICATION 15

An overview of different types of urban infrastructures. Status of urban and rural infrastructure in India. Road Transportation- Design criteria for road, types of traffic and transportation survey, types of roads, infrastructure for road, facilitating pedestrians. Power and communication system - source and distribution networks with safety norms applicable.
Study and design exercises in the above

UNIT II WATER SUPPLY AND DRAINAGE 12

Water supply systems. Quality and quantity requirements. Sources. Collection and conveyance of water. Treatment methods, treatment plant location. Planning distribution systems and their zoning with respect to urban structure.
Factors determining layout of urban drainage and sewerage system. Sewage treatment plant location and functioning. Waste water disposal systems- separate and combined systems. Characteristics of waste water. Industrial pollutants and their effects. Waste water treatment methods. Planning and location of treatment plants. Disposal of municipal and industrial effluents, effects of rivers and water bodies. Legal aspects.

Study and design exercises in the above.

UNIT III SOLID WASTE MANAGEMENT 9

An overview of solid waste. Solid waste collection and disposal issues due to solid waste disposal, planning and design criteria with case studies. Solid waste collection and disposal: Elements of solid wastes management. Classification and properties of solid wastes. On site collection, storage, transportation and disposal of solid wastes. Processing and treatment of solid wastes. Various social aspects of the solid waste management.

Study and design exercises in the above.

UNIT IV INFRASTRUCTURE AND ENVIRONMENT 9

Planning, layout of service lines and interface at building and city scale infrastructure. Green building concepts. Environmental Impact Assessment. Effects of improper infrastructure. Environmental laws. Case studies in the above.

TOTAL: 45 PERIODS

COURSE OUTCOME

CO1 Understanding about the infrastructure system at micro level to macro level

CO2 Ability to plan integrating all aspects of infrastructure for a sustainable development

REFERENCES

1. N.Mani, 'Infrastructure Planning and Development in India', New Century Publication, 2012.
2. Kenneth C Clayton, 'Solid waste management: The Regional approach', Ballinger Pub. Co,
   1973.
3. Chatterjee A.K, 'Water Supply, Waste Disposal and Environmental Engineering', Khanna
   Publishers, 2010.
4. Waldram, J. M, L. T. Minchin, 'Street Lighting', Edward Arnold, London, 1952.
5. V.M. Ehlers, Ernest W. Steel, 'Municipal and Rural Sanitation', McGraw-Hill Inc, US,1977.

6. AmodS.Tilak, 'Environmental Law', Snow White Publications Pvt. Ltd, 2009.
7. HPEC Government of India, 'Report on Indian Urban Infrastructure and Services', The High Powered Expert Committee for estimating the Investment Requirements for Urban Infrastructure Services, New Delhi, 2011.

CO – PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	1	2	3	-	2	2
CO2	1	2	3		2	2
AVERAGE	1	2	3	-	2	2

3- High 2-Moderate 1-Low

AA3016 PSYCHOLOGY OF LEARNING AND DEVELOPMENT L T P/S C
3 0 0 3

OBJECTIVES

- To introduce general concepts of learning theory.
- To help understand research related to theories of learning.
- To enable opportunity to engage in critical analysis of theories through discussions.

UNIT I INTRODUCTION 7

Introduction to learning. Behaviourism - Classical and Operant. Social Learning Theory. Taxonomies. Mastery Learning. Cognitive Information Processing. Problem Solving, Transfer. Meaningful Learning. Situated Cognition. Development and Learning. Interactional Theories of Learning. Nature and Meaning of Psychology. Methods and Scope Psychology.

UNIT II EDUCATIONAL PSYCHOLOGY 9

Nature and Meaning of Educational Psychology. Functions Educational Psychology. Physical, Social, Emotional and Cognitive development patterns. Stage. Specific Characteristics of Infancy and Childhood and their developmental tasks. Characteristics and Problems of Adolescents. Needs, aspiration, attitudes and Self-concept of Adolescents. Guidance and Counselling for adolescents.

UNIT III UNDERSTANDING LEARNER STAGES OF HUMAN DEVELOPMENT 9

Cognitive Development. The Self, Social, and Moral Development. Learner Differences and Learning Needs. Language Development. Language Diversity and Immigrant Education. Culture and Diversity, Behavioural Views of Learning. Cognitive Views of Learning. Complex Cognitive Processes.

UNIT IV LEARNING AND MOTIVATION 11

Concept of learning and its nature. Factors influencing learning – Personal and Environmental. Motivation – Nature, Types. Techniques of enhancing learner's motivation. Theory of Learning. Operant Conditioning theory of learning. Gestalt theory of Learning. Learning goals with classroom activities, create motivating and inclusive environments, and integrating assessment into learning. Frameworks like Backward Design. Effective teaching and learning frameworks from psychological, cognitive, sociological, and educational research.

UNIT V APPRECIATION AND CRITICISM **9**

Ability of Understanding– appreciation, advocatory, descriptive, evaluative, interpretative and other evaluation criteria and methodology. Development of Design Thoughts-understanding, developing and expressing a design thought in its right perspective purpose, manner and mode. Theories and models for experiencing architecture.

TOTAL: 45 PERIODS

COURSE OUTCOMES

CO1 Knowledge about major social and psychological processes involved in learning and development in an educational setting.

CO2 Ability to engage in knowledgeable and productive dialogue with colleagues about human learning, development, and educational practice.

REFERENCES

1. Ellen D. Gagne, Carol Walker Yekovich, Frank R. Yekovich,' The Cognitive Psychology of
   School Learning' , Pearson, 1997.
2. Derville, Leonore, M.T ,'The use of Psychology in Teaching', Longman London, 1982.
3. Biggs, Jhon B, 'The Process of Learning', Pearson Higher Education,1993.
4. McShane, J, 'Cognitive Development, An Information Processing Approach Basic', Black Well, Oxford, 1991.
5. Glover, J.A and Bruning,'Educational Psychology Principles and Applications, Pearson, 1990.
6. Dececco J.P, 'Psychology of Learning and Instruction: Educational Psychology', Prentice Hall of India Ltd, NewDelhi, 1970.
7. Herbert J. Klausmeier, Richard E. Ripple, 'Learning and Human Abilities: Educational Psychology', Joanna Cotler Books, 1975.
8. Carol Davidson Cragoe, 'How to Read A Building', Rizzoli, 2008.

CO -PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**
CO1	3	3	3	2	-	2
CO2	3	3	3	2	-	2
AVERAGE	3	3	3	2	**-**	2

3- High 2-Moderate 1-Low

AA3017 THEORY OF ARCHITECTURAL EDUCATION **L T P/S C**
3 0 0 3

OBJECTIVES

- To give familiarity about theories of architectural education.
- To introduce the idea of cognition development.
- To give familiarity about ways of thinking and learning with respect to architecture.

UNIT I INTRODUCTION **7**

Overview of the important aspects of the discipline of architecture. Nature of Architectural Education based on the nature of the discipline of architecture.

UNIT II TOOLS/ TECHNIQUES TO TEACH ARCHITECTURE 9

Models and methods of Teaching. Teaching Aids In Architecture Education. Types of Teaching Aids- Visual, Audio, etc., Learning by Doing, reflection, exploring, arguing, incidentally. Case-Based Teaching. Advanced Organizer, Concept attainment model, Simulations.

UNIT III SYNECTICS AS A MODEL OF TEACHING. 9

The essence of creativity in synectics. Use of synectics in the design studio. Techniques of teaching-learning: Maxims of teaching and its application to subjects of architecture. Concept mapping, creating concept maps. Basic aspects of classroom management.

UNIT IV STUDENT DEVELOPMENT 11

Need of development. Cognitive Development. Connection between seeing and remembering. Memory Retention. Attention Span. Organizing Communication. Comprehension. Create a Focal Point. Evolution of technology in education. Testing of module/ survey conducted.

UNIT V LEARNING IN ARCHITECTURE DESIGN STUDIO 9

Development of Critical, Creative and Pragmatic Thinking in Architectural Design Studio. Bloom Taxonomy in Design Studio. Qualities which can be attained at various stages in Architectural Design Studio.

TOTAL: 45 PERIODS

COURSE OUTCOME

CO1 Awareness of the importance of contextual excellence in architectural design and methods for the same.

CO2 Knowledge about and ability to integrate interdisciplinary and cognitive aspects of learning, teaching and development.

REFERENCES

1. S. K. Mangal, 'Essential of Educational Technology', PHI Learning Pvt. Ltd., 2009.
2. Bruce Joyce, Emily Calhoun, Marsha Weils, 'Models of Teaching', Pearson, 2014.
3. Klausmier, Ripple,'Learning and Human Abilities' Harper and Row, New York, 1971.
4. Eames Charles, Ray, 'An Eames Anthology', Yale University Press, 2015.

CO -PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**
CO1	3	3	**-**	**-**	3	2
CO2	3	3	**-**	**-**	3	2
AVERAGE	**3**	**3**	**-**	**-**	**3**	**2**

3- High 2-Moderate 1-Low

AA3018 ARCHITECTURAL JOURNALISM AND PHOTOGRAPHY L T P/S C
2 0 1 3

OBJECTIVES

- To introduce basic objectives, methods and skills for practice of professional journalism with particular emphasis on architectural journalism.
- To introduce and explore photography as an important aspect of journalism and as a standalone requirement for the architectural profession.

UNIT I INTRODUCTION TO JOURNALISM. ` 9

Introduction to journalism, its key concepts and objectives. Different types of journalism. Architectural journalism as a specialised area. Outline of aspects related to journalism - research, reporting, writing, editing, photography, columns, public relationship, criticism. Knowledge about copyright, policies, etc.,. Code of ethics. Basic knowledge of press laws, Press Council of India.

UNIT II TECHNIQUES AND SKILLS FOR JOURNALISM 12

Interviewing skills, developing sources, argument and debate as a technique in the investigation of social problems. Evidence, proof, refutation, persuasion. Training in argumentative speaking. Introduction to software needed in journalism and photography, video coverage, walk-through of buildings, production of contemporary architectural journalism. Understanding the individual demands in the context of newspapers, radio, film, and television. Role of the editor. Editing of articles, features and other stories. Editing for online newspaper and magazines. Text preparation, mode of presentation, standards and guidelines for documentation. Multimedia/ online journalism and digital developments.

Exercises in the above.

UNIT III DISCUSSIONS AND ISSUES ON ARCHITECTURE 9

Regional, national and international discussion forums. Changes in contemporary and historical design practices. Discussions on topics needed in an architectural journal and current issues. Types of journals. Works of key architectural journalists. Public discourse on the internet. Mass media and public opinion. Critique on selected pieces of architectural journalism.

Exercises in the above.

UNIT IV ARCHITECTURAL PHOTOGRAPHY 15

Introduction to architectural photography and role of the photographic image in the global world.Basics of photo journalism. Equipment - cameras and lenses. Techniques- film speed, exposure measurement, gray scale, photofinishing and editing digital images. Perspectives- single point, two- point, three- point and methods of correcting distortions. Lighting - external and interior. Exercises in the above.

TOTAL: 45 PERIODS

COURSE OUTCOME

CO1 Knowledge and skill in the basics of journalism

CO2 Familiarity with the scope of architectural journalism

CO3 Skill in architectural photography.

REFERENCES

1. Edward Jay Friedlander and John Lee, 'Feature Writing for Newspapers and Magazines', 7th Edition, Pearson, 2010.
2. David Fuller and Patricia Waugh, eds., 'The Arts and Sciences of Criticism', Oxford: Oxford University Press, 1999.
3. James Foust, 'Online Journalism Principles and Practices of News for the Web', Routledge 2011
4. M. Harris, 'Professional Interior Photography', Focal Press, 2003.
5. Martin Huckerby, 'The Net for Journalists: A Practical Guide to the Internet for Journalists in Developing Countries', UNESCO/Thomson Foundation/ Common wealth Broadcasting Association, 2005.
6. S. J. A.Ward, 'Philosophical Foundations of Global Journalism Ethics', Journal of Mass Media Ethics, Vol. 20, No. 1, 3-21, 2005.
7. M. Heinrich, 'Basics Architectural Photography', Bikhauser Verlag AG, 2008.
8. Gerry Kopelow, 'Architectural Photography: The Digital Way', Princeton Architectural Press, 2007.

CO – PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	-	-	2	-	-	3
CO2	-	-	2	-	-	3
CO3	-	-	2	-	-	3
AVERAGE	-	-	2	-	-	3

3- High 2-Moderate 1-Low

AA3019 ADVANCED PROFESSIONAL PRACTICE L T P/S C
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OBJECTIVES:

- To give detailed understanding of architectural services.
- To give in depth knowledge on consultancy contract /agreement processes.
- To provide exposure to Arbitration in the realm of the architectural profession.
- To give information on construction project management.

UNIT I ARCHITECTURAL SERVICES 9

Types of practices/firms – Comprehensive Scope of services and deliverables- Methods of Engagement of Architects- Architectural Competitions methods and guidelines – Consultancy Fee structure for various typology and value of projects- Professional Ethics and Regulations – Case Studies.

UNIT II CONTRACTING PROCESSES 9

Necessity for a written contract/agreement – Architect's Responsibility & Client's Responsibility- Types of contracts (between Architect and Client)- Comprehensive Architectural Consultancy agreement– others- Contract/ agreement with structural, MEP and other consultants. Case studies.

UNIT III ARBITRATION AS AN ALTERNATIVE DISPUTES RESOLUTION (ADR) MECHANISM 9

Importance of Arbitration. Role of Arbitration and arbitration clause in any contract agreement. Contracts Act of 1872, Limitation Act 1963 and Arbitration and conciliation Act 1996 its terms & Provisions. Costs involved for Arbitration. Reasons leading to Arbitration.

UNIT IV ARBITRAL PROCEEDINGS 9

Initiation of Arbitration proceedings. Procedures and Communication. Composition and jurisdiction of Arbitral Tribunal. Appointment of Arbitration and umpire. Interim Measures by Court / Arbitral Tribunal. Conduct of Arbitral proceedings - Determination of Rules and procedure. Place and language of proceedings. Claim statements and counter claim. Hearings and written proceedings. Experts and Assistance from courts. Form and contents of Arbitral Awards. Setting aside the Arbitral awards. Appeals, insolvency and Limitation. Misconduct of Arbitrator. Case studies.

UNIT V PROJECT MANAGEMENT 9

Architect's role in project implementation- Architect's deliverables for Tender stage- Assistance in Tender process- Co-ordination with Project Management Consultant, Engineer-in-charge or Supervisor – Site meetings, site inspection, shop drawing review- Issues related to Management of Clients and other stake holders - Case Studies.

TOTAL: 45 PERIODS

COURSE OUTCOME

CO1 Detailed understanding of architectural services
CO2 Familiarity with process of consultancy contracts/ agreements
CO3 Exposure to arbitration as alternative dispute resolution mechanism
CO4 Understanding of importance of Architect's role in project implementation and managing issues related to all stake holders

REFERENCES:

1. Abdul Razzak Rumane, Quality Tools for Managing Construction Projects, Taylor & Francis Group; ISBN13-9781466552142.
2. Dr. Roshan H. Namavati Professional Practice, 2001 Edition.
3. K.G. Krishnamurthy, S.V. Ravindra: Professional Practice, Prentice Hall India Learning Private Limited (2014).
4. Prof. Madhav Deobhakta and Architect Meera Deobhakta; Architectural Practice India, 2nd Edition, 2008.
5. Prof. Madhav Deobhakta; Arbitration for Architects and Project Managers, 2011.
6. Manual of Architectural Practice 2022 (Published by Registrar Council of Architecture, India)

CO-PO Mapping

Course Outcome (CO)	Programme Outcome (POs)					
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	1	2	2	-	-	3
CO2	1	2	2	-	-	3
CO3	1	2	2	-	-	3
CO4	1	2	2	-	-	3
AVERAGE	1	2	2	-	-	**3**

3- High 2-Moderate 1-Low