



ANNA UNIVERSITY, CHENNAI

POSTGRADUATE CURRICULUM (NON-AUTONOMOUS AFFILIATED INSTITUTIONS)

Programme: M. Arch -Urban Design

Regulations: 2025

Category

PC – Professional Core

PE – Professional Elective

BS & AE – Basic Sciences & Applied Engineering

PAE – Professional Ability Enhancement

SD – Skill Development

HUM – Humanities (including Languages and others)

Course Type

S - Studio

T – Theory

TS – Theory cum Studio

IT – Internship Training

LIT – Laboratory Integrated Theory

TCP – Total Contact Period(s)

L – Lecture

P – Practical

T – Tutorials

S - Studio

Semester I

S. No.	Course Code	Course Title	Type	Periods per week			TCP	Credits	Category
				L	T	P/S			
1.	MH25C01	Research Methodologies for Built Environment	T	3	0	0	3	3	PC
2.	UR25101	History and Theory of Urban Design	T	3	0	0	3	3	PC
3.	UR25102	Urban Planning: Policy and Practice	T	3	0	0	3	3	PC
4.	UR25103	Urban Heritage and Conservation	T	3	0	0	3	3	PC
5.	UR25104	Urban Analysis and Diagramming	TS	1	0	3	4	4	PAEC
6.	UR25105	Urban Design Studio I	S	0	0	0	10	10	PC
Total							26	26	

Semester II (Prerequisite- Pass in Urban Design Studio I)

S. No.	Course Code	Course Title	Type	Periods per week			TCP	Credits	Category
				L	T	P			
1.	UR25C02	Social Theory and the City	T	3	0	0	3	3	PC
2.	UR25201	Urban Housing: Types and Practice	T	3	0	0	3	3	PC
3.	UR25202	Urban Form performance and Simulation Audit	T	3	0	0	3	3	PC
4.	MH25C03	Geographical Information Systems for Built Environment	TS	1	0	3	4	4	PAEC
5.		Professional Elective I	---	X	X	X	3	3	PE
6.	-	Industry Oriented Course	---	X	X	X	---	1	SD
7.	UR25203	Urban Design Studio II	S	0	0	0	10	10	PC
Total							27	27	

Semester III (Prerequisite- Pass in Urban Design Studio II)

S. No.	Course Code	Course Title	Type	Periods per week			TCP	Credits	Category
				L	T	P			
1.	UR25301	Sustainable Urban Development	T	3	0	0	3	3	PC
2.	UR25302	Urban Design: Practice and Processes	T	3	0	0	3	3	PC
3.	UR25303	Dissertation	T	0	0	4	4	4	PC
4.	UR25304	Urban Design Studio III	S	0	0	10	10	10	PC
5.		Professional Elective II	---	X	X	X	3	3	PE
6.		Professional Elective III	---	X	X	X	3	3	PE
7.	UR25305	Internship Training	---	---	--	---	---	2	SD
Total							26	28	

Semester IV (Prerequisite- Pass in Urban Design Studio III)

S. No.	Course Code	Course Title	Type	Periods per week			TCP	Credits	Category
				L	T	P			
1.	UR25401	Thesis Project	S	0	0	20	20	20	SD
2.		Professional Elective IV	---	X	X	X	3	3	PE
Total							23	23	

Total Credits of _____

Professional Elective Courses (PEC)

S. No.	Course Code	Course Title	Periods per week			Total Contact Periods	Credits
			L	T	P/S		
1.	UR25C03	Culture of Public Spaces	3	0	0	3	3
2.	UR25C01	Quantitative Techniques and Data Representation	3	0	0	3	3
3.	MH25C06	Soft Skills	2	0	1	3	3
4.	UR25001	City Form Development in Asia	3	0	0	3	3
5.	UR25002	Human Settlements	3	0	0	3	3
6.	UR25003	Urban Infrastructure: Resources and Resilience	3	0	0	3	3
7.	UR25004	Coding for Urban Design	3	0	0	3	3
8.	UR25005	Urban Economics, Sociology and Management	3	0	0	3	3
9.	MH25C05	Psychology of Learning and Development	3	0	0	3	3
10.	UR25006	Urban Landscapes	3	0	0	3	3
11.	UR25007	Urban Transportation Systems	3	0	0	3	3
12.	UR25008	Disaster Prevention and Mitigation in Cities	3	0	0	3	3
13.	MH25C07	Theory of Architectural Education	3	0	0	3	3

Semester I

MH25C01	Research Methodologies for Built Environment	L	T	P/S	C
		3	0	0	3
<p>Course Objectives:</p> <ul style="list-style-type: none"> 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. 					
<p>Introduction: 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.</p>					
<p>Research Process: 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.</p>					
<p>Researching and Data Collection: Library and archives. Internet: New information and the role of internet. Finding and evaluating sources. Misuse. Test for reliability. Ethics.</p> <p>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. Socio-economic research techniques such as focused group discussions, participant observation.</p>					
<p>Methods and Tools in Urban Research: Space syntax: key concepts of space syntax and their development, spatial properties - connectivity, integration, intelligibility, etc. - of the built environment and explore their impact on user behavior, visual field/isovist characteristics - compactness, occlusivity, clustering coefficient, etc. - of the built environment and explore their impact on user behavior, analyse architectural and urban layouts using space syntax methods - convex analysis, justified graph, axial analysis and visibility graph analysis. Use of excel software for analyzing data; applications of features of excel- basic and selected advanced features. Data analysis: Advanced Excel, SPSS. Impact of 'Big Data' or statistics on interpretation of urban phenomena</p>					
<p>Report Writing & Case Studies: Research writing in general and its components. Developing the outline, referencing, writing the bibliography, presentation, etc.. 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.</p>					
<p>Weightage: Continuous Internal Assessment: 40%, End Semester Examinations: 60%</p>					
<p>Assessment Methodology: Two Assessments with equal weightage. One Assessment as Internal written Test /Examination (50%), second as Assignment (50%) of any mode such as study, seminar, and or a combination of modes, etc</p>					
<p>References:</p> <ol style="list-style-type: none"> Groat, L., & Wang, D. (2013). <i>Architectural research methods</i> (2nd ed.). John Wiley 					

& Sons.

2. Booth, W. C., Colomb, G. G., & Williams, J. M. (2008). *The craft of research* (3rd ed.). University of Chicago Press.
3. Borden, I., & Ruedi, K. (2005). *The dissertation: An architecture student's handbook* (2nd ed.). Architectural Press.
4. Kumar, R. (2014). *Research methodology: A step-by-step guide for beginners* (4th ed.). SAGE Publications.
5. Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE Publications.
6. Smith, J. A., Flowers, P., & Larkin, M. (2009). *Interpretative phenomenological analysis: Theory, method and research* (1st ed.). SAGE Publications.
7. Ward, K. (2013). *Researching the city*. SAGE Publications.
8. Gaur, A. S. (2011). *Statistical methods for practice and research: A guide to data analysis using SPSS* (2nd ed.). Response Books.

E-resources:

1. Bell, J., & Waters, S. (2018). *Doing your research project: A guide for first-time researchers* (7th ed.). McGraw-Hill Education. ISBN 9780335243396
2. Sheppard, V. (2020). *Research methods for the social sciences: An introduction*. BCcampus & Open Textbook Library.
<https://open.umn.edu/opentextbooks/textbooks/1589>
3. Schulman, J. S. (2024, March 28). *An exploration of research methods* (ResearchMethod.net). Manteio Company.<https://researchmethod.net>.
4. Phelps, J. (2021). *Engaging Research Communities in Writing Studies: Ethics, Public Policy, and Research Design* (1st ed.). Routledge.
<https://doi.org/10.4324/9781003082002>
5. Joore, P., Stomppff, G., & van den Eijnde, J. (Eds.). (2022). *Applied Design Research: A Mosaic of 22 Examples, Experiences and Interpretations Focussing on Bridging the Gap between Practice and Academics* (1st ed.). CRC Press.
<https://doi.org/10.1201/9781003265924>

	Description of CO	PO Mapping
CO1	Identify, decipher and interpret issues relating to architecture based on research enquiry methods.	PO1 (3) PO2 (2)
CO2	Exemplify different methods of conducting research and research writing	PO1 (3) PO2 (2)
CO3	Interpret specific research related to built environment.	PO1 (3) PO2 (2)

UR25101	History And Theory of Urban Design	L	T	P/S	C
		3	0	0	3
<p>Course objectives:</p> <ul style="list-style-type: none"> To give comprehensive understanding of development of urban form and its determinant factors in global and Indian contexts. To introduce and enable understanding of various aspects of urbanism through historical and theoretical frameworks To understand historical significance of urban design interventions. 					
<p>Introduction: Introduction to origin and evolution of cities: form and urbanism. Normative, positive theories; Cosmic, Machine & Organic Models; Descriptive & functional theories.</p> <p style="text-align: right;">6 periods</p>					
<p>Evolution of Urban Form-Global Context: Early Cities - classical urban form. Medieval towns. Renaissance urban form and ideal cities. Industrialization, colonialism and model settlements. Reconfiguration Paris, London, Vienna, Barcelona. Modernism, Modernity and ideal settlement form. American grid-iron planning-City Beautiful. Organic cities. CIAM IV and the zoned city. Post war, post-colonial city form, zoned city and place. Urban renewal and community. Mixed use. Development of suburbs, Impact of safety concerns, sustainability, globalization and technology on urban form.</p> <p style="text-align: right;">10 periods</p>					
<p>Evolution of Urban Form – Indian Context: Early settlements (Indus Valley, southern peninsula, Indo Gangetic plain). Indian notions of space from epics, literature and treatises. Temple towns and ports of Tamizhagam (Kanchipuram, Muziris). City form during Magadha and Gupta Periods (Pataliputra, Varanasi). Medieval cities (Hampi, Jaipur). Mughal urban form (Shahjahanabad, Srinagar). Early colonial settlements (Madras, Pulicat, Goa). Colonial space types and urban form (Calcutta, New Delhi, Darjeeling). Zoned cities (Bhubaneswar and Gandhi Nagar). Industrial towns (Jamshedpur). Zoned layouts (Anna Nagar-Chennai, Whitefield - Bengaluru). Globalization and Indian cities</p> <p style="text-align: right;">10 periods</p>					
<p>Modern and Post-Modern Urbanist Theories : Theories of visual-artistic and socialist tradition - Cullen's townscape theories. Three theories of urban design: figure ground, networks and place. Lynch's ideas of good city form and image-ability. Phenomenology - architecture of the city - responsive environments. Claire Cooper Marcus and behavioral studies. Public and private domains. Suburbs and periphery- privacy, territoriality and proximities theory - responsive environments - defensible spaces- community design. Social life of urban spaces. Life between buildings - right to city - gender, class and city. Jane Jacobs - Death and life of great American cities. Futuristic cities. Charles Correa: Housing and Urbanization, National Commission for Urbanization report, 1989. New urbanism</p> <p style="text-align: right;">10 periods</p>					

Contemporary Urban Interventions: Contemporary Urban condition and future of cities: globalization and local culture, climate change, sustainability and urban resilience. Transportation and city infrastructure. Communication, big data and automation overlay - contemporary processes in urban design - place and public realm in the digital age-participatory design.

9 periods

45 Periods

Weightage: Continuous Internal Assessment: 40%, End Semester Examinations: 60%.

Assessment Methodology: Two Assessments with equal weightage.

One Assessment as Internal written Test /Examination (50%), second as Assignment (50%) of any mode such as study, seminar, and or a combination of modes, etc.

References

1. Morris, A. E. J. (1996). *History of urban form before the industrial revolution*. Prentice Hall.
2. Carmona, M., Heath, T., Oc, T., & Tiesdell, S. (2010). *Public places, urban spaces: The dimensions of urban design* (2nd ed.). The Architectural Press.
3. Bacon, E. (1976). *Design of cities*. Penguin.
4. Cullen, G. (1978). *The concise townscape*. The Architectural Press.
5. Kostof, S. (2005). *The city assembled: The elements of urban form through history*. Thames & Hudson.
6. Kostof, S. (1991). *The city shaped: Urban patterns and meanings through history*. Thames & Hudson.
7. Lang, J. (2017). *Urban design: A typology of procedures and products*. The Architectural Press.
8. Correa, C. (1999). *Housing and urbanization*. Thames & Hudson.
9. Madanipour, A. (Ed.). (2009). *Whose public space? International case studies in urban design and development*. Routledge.
10. Chakrabarti, D. K. (1995). *The archaeology of ancient Indian cities*. Oxford University Press.
11. Waddell, L. A. (2013). *Report on the excavations at Pātaliputra*. Book on Demand Ltd.
12. Champakalakshmi, R. (1997). *Trade, ideology and urbanization*. Oxford University Press.
13. Lynch, K. (1984). *Good city form*. MIT Press.
14. Lynch, K. (1960). *The image of the city*. MIT Press.
15. Ritchie, A. (2000). *Sustainable urban design: An environmental approach*. Taylor & Francis.
16. Barnett, J. (1982). *An introduction to urban design*. Harper & Row.
17. Broadbent, G. (2003). *Emerging concepts in urban space design*. Taylor & Francis.
18. Gosling, D., & Maitland, B. (1984). *Urban design: The architecture of towns and cities*. St. Martin's Press.

E –resources

1. <https://ocw.mit.edu/courses/urban-studies-and-planning/>
2. <https://www.planetizen.com/>
3. <https://www.arch.columbia.edu/publications/reader/1-theory-of-urban-design>
4. <https://www.jstor.org/>

	Description of CO	PO Mapping
CO1	Knowledge of evolution of global and Indian urban form	PO1 (1) PO2 (2) PO5 (3)
CO2	Ability to comprehend historical and theoretical frameworks to address contemporary urban issues.	PO1 (3) PO5 (2) PO6 (2)
CO3	Understanding on the historical significance of urban design interventions in global urban scenario.	PO2 (1) PO3 (2)

UR25102	Urban Planning: Policy and Practice	L	T	P/S	C
		3	0	0	3
<p>Course Objectives:</p> <ul style="list-style-type: none"> • To give awareness about the principles of urban planning • To present a critical overview of relevant urban planning policies, techniques and methods, planning processes and their impact on urban growth, development & infrastructure. • To give exposure to different aspects of data, planning standards, models and projections. 					
<p>Planning theories and Definitions: Planning glossary. Planning theories and applications in settlement planning. Types of plans: Master Plans, development plans, structure plans, physical, economic and social plans. Planning scales: regional, city, zonal, area, planned unit development schemes. Theories of physical planning: center-place theory, gravity model, primate cities.</p> <p style="text-align: right;">9 periods</p>					
<p>Data Base for Physical Surveys: Data base for physical surveys including land use, building use, density, building age, etc., and socio- economic surveys. Sampling and survey techniques. Land use classification or coding. Preparation of base maps: concepts of scales, components and detailing for various levels of plans (like regional plan, city plan, zoning plan, and local area plan). Classification, delineation and ranking of regions and settlements - Guttman's Scalogram. Desire line diagrams, Threshold analysis. Input output analysis, SWOT analysis. Planning models (descriptive and decision making models). Methods of population forecasts and projections: urban- rural, urban concentration, metropolitan concentration, location dimensions of population groups- social area and strategic choice approach. Interconnected decision area analysis.</p> <p style="text-align: right;">9 periods</p>					
<p>Spatial Standards: Spatial standards, performance standards and benchmarks, and variable standards in applicable scenarios. URDPFI guidelines - Zoning regulations/ordinances and DCR and (development control rules and regulations). Emerging techniques in settlement planning: land management techniques, Land pooling, land assembly, PRT (Plot reconstitution techniques), land readjustment, transfer of development rights.</p> <p style="text-align: right;">9 periods</p>					
<p>Techniques And Approaches in Urban Planning: Various approaches to urban land zoning: mixed zone, floating zone, white zoning etc. TOD (Transit Oriented Development). New Urbanism and PIU (Principles of Intelligent Urbanism). Public participation in planning process. Regional urban resilient planning to address climate change and global emergencies.</p> <p style="text-align: right;">9 periods</p>					
<p>Urban Infrastructure: Concepts of urban infrastructure-social, physical, health Infrastructure. Urban form-size implications for services integration. Infrastructure overlay in PUDs - services and utilities network - qualitative and quantitative assessment for</p>					

assessment of demand - supply - water supply, sewerage/drainage and waste management-communication and transit networks & urban social Infrastructure. Infrastructure development financing models and emerging options.
9 periods
Total: 45 periods
Weightage: Continuous Internal Assessment: 40%, End Semester Examinations:60%.
Assessment Methodology: Two Assessments with equal weightage. One Assessment as Internal written Test /Examination (50%), second as Assignment (50%) of any mode such as study, seminar, and or a combination of modes, etc.
<p>References:</p> <ol style="list-style-type: none"> 1. Kulshrestha, S. K. (2012). <i>Urban and regional planning in India: A handbook for professional practice</i>. Sage Publications. 2. Fainstein, S. S., & DeFilippis, J. (Eds.). (2016). <i>Readings in planning theory</i> (4th ed.). Wiley Blackwell. 3. Birch, E. L. (2008). <i>The urban and regional planning</i>. Routledge. 4. Faludi, A. (1973). <i>A reader in planning theory</i>. Pergamon Press. 5. Kueckeberg, D., & Silvers, A. (1974). <i>Urban planning analysis: Methods and models</i>. John Wiley. 6. Bracken, I. (2006). <i>Urban planning methods</i>. Routledge. 7. Ratcliffe, J. (1981). <i>An introduction to town and country planning</i> (Living Environment series). Nelson Thornes Ltd. 8. Keeble, B. L. (n.d.). <i>Principles and practice of town and country planning</i>. Estates Gazette Ltd. 9. [Author's first name missing] (n.d.). <i>An introduction to town planning techniques</i>. Hutchinson Educational. 10. Moughtin, C. (2003). <i>Urban design methods and techniques</i>. Elsevier. 11. Das, A. (2007). <i>Urban planning in India</i> (Illustrated ed.). Rawat Publications. 12. Government of India, Ministry of Urban Development. (n.d.). <i>Urban and regional development plans formulation and implementation (URDPFI) guidelines</i> (Vol. [volume number if known]).
<p>E -resources</p> <ol style="list-style-type: none"> 1. https://niua.in/ 2. https://mohua.gov.in/upload/uploadfiles/files/URDPFI%20Guidelines%20Vol%201.pdf 3. https://ocw.mit.edu/courses/urban-studies-and-planning/ 4. https://www.lincolnst.edu/publications

	Description of CO	PO Mapping
CO1	Describe various urban planning principles, facets, types, scales, theories and regulations	PO1 (3) PO2 (2) PO3 (1) PO5 (2)

	Description of CO	PO Mapping
		PO6 (2)
CO2	Summarize urban planning frameworks, tools, methodology and applications in contemporary situations.	PO1 (3) PO2 (1) PO3 (2) PO5 (3) PO6 (3)

UR25103	Urban Heritage and Conservation	L	T	P/S	C
		3	0	0	3
<p>Course Objectives:</p> <ul style="list-style-type: none"> To introduce the idea of conservation as value addition to city life, place, memory and identity To enable understanding of the importance of conserving building heritage, historic precincts & natural heritage To give awareness of conservation strategies & legislature, in preserving the essence of a heritage structure or precinct 					
<p>Introduction to Conservation: Understanding the need for heritage conservation. Types of Heritage. Introduction to Conservation, preservation and adaptive reuse of buildings and historic districts.</p> <p style="text-align: right;">10 periods</p>					
<p>Conservation Strategies: Listing of monuments. Documentation of historic structures: assessing architectural character, building material audit. Historic report- Guidelines for preservation, rehabilitation and adaptive re-use of historic structures. Seismic retrofit. Differently-abled access /services additions to historic buildings. Heritage site management. Conservation management. Concepts of integrated conservation, sustainable conservation, in-situ conservation. Case studies of global and Indian projects.</p> <p>20 periods</p>					
<p>Historic Districts: Understanding characteristics and issues of historic districts, places and cities. Mapping, documentation and development guidelines. Overlay with new age urban infrastructure. Heritage tourism circuits management and master plan. Case studies: Varanasi, Bodhgaya, Thanjavur, Goa, Pondicherry, Aleppo, Rome, Jerusalem, Bath, Beijing, Paris, Istanbul, Galle, Bhutan and Ladakh.</p> <p style="text-align: right;">20 periods</p>					
<p>Urban Ecology and Natural Heritage: Urban Ecology. Riparian corridors. Wetlands and urban lakes, urban forests. Coast preservation - code compliance. Case study of Nanmangalam, Guindy national park, Pallikaranai, Mambakkam Lake. Code compliance with Ministry of Environment's legislation and recommendations.</p> <p style="text-align: right;">10 periods</p>					
<p>Conservation Legislation: Central and state government policies and legislation. Role of Conservation Agencies and conventions: ICOMOS, ICCROM, UNESCO, ASI, INTACH, ICHN. Charters and trends in conservation: Florence Charter, Burra charter. Norms for conservation of heritage buildings and sites as part of development regulations, Heritage byelaws and special conditions. Heritage impact assessment. Community heritage leverage legislation such as LEASE Act, RENT Control Act & CESS and TDR. Government of India heritage programs such as HRIDAY and PRASAD.</p> <p style="text-align: right;">9 periods</p>					
Total:45 periods					

Weightage: Continuous Internal Assessment: 40%, End Semester Examinations:60%.
Assessment Methodology: Two Assessments with equal weightage. One Assessment as Internal written Test /Examination (50%), second as Assignment (50%) of any mode such as study, seminar, and or a combination of modes, etc.
References: 1. PEARL. (2015). <i>Urban heritage in Indian cities</i> . INTACH Publications. 2. Cody, E., & Siravo, J. (Eds.). (2019). <i>Historic cities: Issues in urban conservation</i> . Getty Publications. 3. Appleyard, D. (1979). <i>The conservation of European cities</i> . MIT Press. 4. Fitch, J. M. (1990). <i>Historic preservation: Curatorial management of the built world</i> . University of Virginia Press. 5. Fielden, B., & Stipe, R. E. (2003). <i>A richer heritage: Historic preservation in the twenty-first century</i> . University of North Carolina Press. 6. Feilden, B. M. (1994). <i>Conservation of historic buildings</i> (3rd ed.). Butterworth-Heinemann. 7. Brereton, C. (1995). <i>The repair of historic buildings: Advice on principles and methods</i> (Aspects of Conservation). Historic England. 8. Mathews, M. S. (1998). <i>Conservation engineering (Restoration of historic monuments: Suggestions for practice)</i> . Universität Karlsruhe.
E -resources 1. https://www.intach.org/ 2. https://www.getty.edu/conservation/ 3. https://www.unesco.org/en/culture/heritage 4. https://www.icomos.org/en/

	Description of CO	PO Mapping
CO1	Describe the role of conservation & identity in burgeoning cities.	PO1 (3) PO2 (2) PO6 (3)
CO2	Summarize the conservation types, strategies & legislation.	PO1 (2) PO3 (2) PO5 (2) PO6 (2)
CO3	Use critical conservation frameworks for evaluating historical buildings and districts, urban ecology and propose strategies for preservation, conservation and adaptive reuse.	PO2 (2) PO5 (1) PO6 (3)

UR25104	Urban Analysis and Diagramming	L	T	P/S	C
		1	0	3	4
<p>Course Objectives:</p> <ul style="list-style-type: none"> To provide knowledge on visualizing, diagramming, mapping and analyzing urban form and place To enable understanding of the importance of data mining and its various methods. 					
<p>Introduction: Introduction to urban glossary. Basics of mapping- map types. Introductory exercise. Study of an urban transect with sketch-walks. 12 Periods</p>					
<p>Cognitive Diagramming and Base MAPS: Basics of mapping. Preparation of figure ground maps collating satellite images, GIS, area development maps, records and ground corroboration. Cognitive mapping of tangible and intangible layers: land-use, districts and boundaries, physical histogenesis, heritage fabric, program-movement, activity, nodes, thresholds-networks, pedestrian pathways, transit density, policy initiatives, population demographics, visual and non-visual clues, social memory, community narratives and place realms, soundscape, real estate dynamics, ecology and environmental factors, physical and social infrastructure. 12 periods</p>					
<p>Mapping with Theory Overlays: Exploring and analyzing selected urban sites with mapping overlays of urban theories (as filters) on figure ground diagrams and base maps: imageability, permeability, variety, legibility, built, natural and cultural landscapes, perception, monuments and dwelling, spatial syntax, heritage urban form, social life of small urban spaces, life between buildings, FARMAX. Urbanism in the age of climate change, defensible space, and infrastructural urbanism, urban flows, e-cities, e-bodies, globalization and local culture, livability. 12 periods</p>					
<p>Data Visualisation: Envisioning information. Graphical representation of data. Ben fry's seven steps in creating data visualization: Acquire, Parse, Filter, Mine, Represent, and Refine, Interact. Visual interconnection of facts& ideas: Relationship facts, contacts, connections, time-series, relational graphics, data maps, multivariate designs, scales. Quantitative; discreet; continuous; categorized data to be visualized with graphics software. Visualizing data for various urban development indices and quotients such as livability, walkability, mobility, commuting, off-peak travelling, local business, health, resilience, happiness, urban stress, surveillance and SDG, sustainable development goals. 12 periods</p>					
<p>Data Analysis: Detection of graphical deception: design variation vs. data variation. Sources of deception. Aesthetics and Data graphical displays. Urban data mining -extracting meaningful information from raw data through simple programming software, iterative data analysis and refinement for various urban development indices and quotients. Social media data analysis as a complementary tool for urban design. 12 periods</p>					
Total: 60 Periods					
<p>Weightage: Continuous Internal Assessment: 50%, End Semester Examinations:50%.</p>					
<p>Assessment Methodology: Three Assessments with equal weightage. One Assessment as Internal written Test /Examination (33.33%), other two assessment</p>					

(each assessment weightage - 33.33%) as continuous marking of the work and performance during the particular assessment period such as drawings, models, study, seminar, etc.,

References:

1. Allen, S. (1999). *Points and lines: Diagrams and projects for the city*. The Architectural Press.
2. Bentley, I., Alcock, A., Murrain, P., McGlynn, S., & Smith, G. (1985). *Responsive environments: A manual for designers*. The Architectural Press.
3. Tschumi, B. (2014). *Notations: Diagrams and sequences*. Artifice Press.
4. McCandless, D. (2009). *The visual miscellaneum: A colourful guide to the world's most consequential trivia*. HarperCollins Publishers.
5. Chakrabarti, V. (2013). *A country of cities: A manifesto for an urban America*. Metropolis Books.
6. Montgomery, C. (2015). *Happy city: Transforming our lives through urban design*. Penguin.
7. Dodge, M., Kitchin, R., & Perkins, C. (2011). *The map reader*. John Wiley.
8. Lynch, K. (1960). *The image of the city*. MIT Press.
9. Norberg-Schulz, C. (1980). *Towards a phenomenology of architecture*. Rizzoli.
10. Mitchell, W. J. (1996). *City of bits: Space, place and the infobahn*. MIT Press.
11. Horan, T. A. (2000). *Digital places: Building our city of bits*. Urban Land Institute.
12. Watson, D., Szantoi, Z., & Uffelen, H. von. (2003). *Time saver standards for urban design*. McGraw-Hill Education.
13. Parolek, D., Parolek, K., & Cram, P. (2000). *Form based codes*. John Wiley.
14. Koolhaas, R. (Ed.). (2001). *Project on the city: Great leap forward*. Taschen.
15. Ingels, B. (2009). *Yes is more*. Taschen.
16. Calthorpe, P. (2011). *Urbanism in the age of climate change*. Island Press.
17. Banerjee, T., & Loukaitou-Sideris, A. (2014). *Companion to urban design*. Routledge.
18. Tufte, E. R. (2006). *The visual display of quantitative information* (2nd ed.). Graphics Press.

E -Resources

1. <https://senseable.mit.edu/>
2. <https://www.urbanobservatory.ac.uk/>
3. <https://informationisbeautiful.net/>
4. <https://www.edwardtufte.com/tufte/>

	Description of CO	PO Mapping
CO1	Correlate and comprehend urban condition with mapping-diagramming tools and an array of urban glossary	PO1 (2) PO2 (2) PO4 (2) PO6 (3)
CO2	Extract, visualize and analyse urban data using analytical tools, to understand and communicate urban development issues, indices and quotients.	PO1 (3) PO3 (2) PO4 (3) PO5 (2)

UR25105	Urban Design Studio I	L	T	P/S	C
		0	0	10	10

Course Objectives:

- To enable exploration of urban cores in flux and propose future scenarios for their development
- To enable exploration of opportunities to conserve, strengthen and revitalize city cores

Most often, city cores have substantial historic building stock and a network of places intertwined with local culture. It is imperative that old city cores - their networks, street life, and community spaces are taken into consideration in infrastructure up gradation, public projects and real estate development. New development, community infrastructure and amenities should be sympathetic to the context of the local community, architectural heritage and equity and enrich city cores.

This studio seeks to address the role of transformative place making in the context of city cores.

Students will explore the selected area of study, through experiential mapping, physical mapping, and interviews, review of policy and regulations, application of urban design theories, frameworks, data visualization and models.

This studio seeks to address the role of transformative place making in the context of city cores.

Students will explore the selected area of study, through experiential mapping, physical mapping, and interviews, review of policy and regulations, application of urban design theories, frameworks, data visualization and models.

Students will analyze various urban design parameters inclusive of:

the role of historic districts, urban morphology and building types, places and landform types, in a city's socio-cultural identity

urban design challenges in integrating transit, pedestrian, social, health and community infrastructure in historic fabric

relationship between a building and public realm

placing urban catalysts

local cultural aspirations and notions of space-place

safety, health and public space

Probable projects might include urban in-fills, urban catalysts, transit, and pedestrian and community infrastructure as modes for urban revitalization, conservation guidelines, and form-based code manuals for contextual transformation, cultural landscape and place making proposals.

90 Periods

Weightage: Continuous Assessment: 60%, End Semester Examinations: 40%.

Assessment Methodology: Three Assessments with equal weightage.

Each assessment shall incorporate continuous marking of the work and performance during the particular assessment period. Each assessment weightage - 33.33%.

References

1. Bentley, I. (Ed.). (1988). Responsive environments: A manual for designers (2nd ed.). The Architectural Press.

2. Gosling, D., & Maitland, B. (1989). Urban design: The architecture of towns and cities. St. Martin's Press.
3. Correa, C. (1999). Housing and urbanization. Thames & Hudson.
4. Parolek, D., Parolek, K., & Cram, P. (2000). Form based codes. John Wiley.
5. Gehl, J. (2011). Life between buildings: Using public space. Island Press.
6. Whyte, W. (2001). The social life of small urban spaces. Project for Public Spaces.
7. Lynch, K. (1960). The image of the city. MIT Press.
8. Broadbent, G. (2003). Emerging concepts in urban space design. Taylor & Francis.
9. Norberg-Schulz, C. (1980). Towards a phenomenology of architecture. Rizzoli.
10. Watson, D., Szantoi, Z., & von Uffelen, H. (2003). Time saver standards for urban design. McGraw-Hill Education.
11. Fitch, J. M. (1990). Historic preservation: Curatorial management of the built world. University of Virginia Press.
12. Goldsmith, A. S. (2010). What we see: Advancing the observations of Jane Jacobs. New York University Press.

E -resources

1. <https://www.pps.org/>
2. <https://www.jan-gehl.com/>
3. <https://formbasedcodes.org/>
4. <https://www.archdaily.com/tag/urban-design>

	Description of CO	PO Mapping
CO1	Summarize the issues of transforming urban cores	PO1 (2), PO2 (2), PO3 (3), PO5 (2), PO6 (3)
CO2	Propose strategies for transformative contextual place making at historic precincts in flux.	PO1 (3), PO3 (2), PO5 (2), PO6 (2)

Semester II

UR25C02	Social Theory and The City	L	T	P/S	C
		3	0	0	3
<p>Course Objectives:</p> <ul style="list-style-type: none"> To give critical understanding of the city and its underlying forces through various social theories To give awareness of urban processes through political, economic, social and cultural lenses. To give knowledge about the role of people and culture in city identity. 					
<p>City, Culture and Its Identity Understanding city culture. Theories of Socio-cultural memory. Understanding visual culture. Urban and cultural anthropology. Contemporary Urban issues. City and Identity. Theories of Margaret Mead, Levi Strauss, Saskia Sassen, Claire Cooper Marcus, MSS Pandian, Malcom Adisheshaiah and Arjun Appadurai.</p>					
<p>Historiography and the City Understanding authorized and subaltern histories of cities - society and cities in vernacular literature, folk tradition and popular art - post-colonial theories and histories of Indian Cities.</p>					
<p>Power and Resistance In the City Spaces Understanding the concept of power and its space manifestation in cities. Historic Indian Treatises: Chanakya Neeti, Harshacharitra, Ula, Uthirmerur inscriptions, Baburnama, Ain-i-Akbari. Theories of Giddens, Aldo Rossi, Corbusier, Oscar Niemeyer, Foucault. Case studies from New Delhi, Istanbul, Los Angeles, Jerusalem, Shenzhen.</p>					
<p>Urban Politics City and its people. Cities and social theory: Marxism, public realm theory, difference theory, critical theory. Spatial-social justice in the city. Spatial inequalities and urban form. Neoliberalism and the city. Globalization and urban spatial politics. Theories of Jane Jacobs, Pyatok, Newmann, Saskia Sassen. Case studies of Belfast, Berlin, Curitiba city, Caracas, Scandinavian cities, Mumbai -Lokhandwala region.</p>					
<p>Gaze in the City Space and body: The Flâneur, gaze and urban public spaces. Tourist gaze, gender gaze, colonial gaze. Sexuality in urban space: feminista, queer, transgender, etc.</p>					
<p>Weightage: Continuous Internal Assessment: 40%, End Semester Examinations:60%.</p>					
<p>Assessment Methodology: Two Assessments with equal weightage. One Assessment as Internal written Test /Examination (50%), second as Assignment (50%) of any mode such as study, seminar, and or a combination of modes, etc.</p>					
<p>References:</p> <ol style="list-style-type: none"> Ritzer, George. Postmodern Social Theory. Beijing: Beijing da xuechu ban she. 2004 Sharp, Kristen, and Elizabeth Grierson. Re-Imagining the City: Art, Globalisation and Public space. Bristol: Bristol: Intellect Books, 2013 Phadke, Shilpa and Khan, Sameera. Why Loiter? New Delhi: Penguin India, 2011 Montgomery, Charles. Happy City: Transforming our lives through Urban Design. London: Penguin, 2015 Said, Edward. Orientalism: Western Conceptions of the Orient. London: Penguin Publication, 1978 Rapoport, Amos. The meaning of the built environment. Tucson: The University of Arizona Press, 1982 Rapoport, Amos. House, Form and Culture. London: Pearson Education, 1969 					

8. Srivastava A.R.N. Essentials of Cultural Anthropology. New Delhi: Prentice Hall India Private Ltd, 2005

E-Resources:

1. <https://www.marxists.org/reference/subject/philosophy/works/ge/ baudelaire.htm>
2. https://www.researchgate.net/publication/228339061_The_Tourist_Gaze
3. <https://www.tandfonline.com/doi/abs/10.1080/0042098042000326213>
4. <https://www.escholar.manchester.ac.uk/api/datastream?publicationPid=uk-ac-man-scw:2m1746&datastreamId=FULL-TEXT.PDF>

UR25201	Urban Housing: Types and Practice	L	T	P/S	C
		3	0	0	3
Course Objectives: <ul style="list-style-type: none"> To understand Indian and global fundamentals of housing practices. To understand the role of policy, agencies, finance models and resource mobilization for urban housing 					
Introduction to Housing Housing scenario in India. Housing types and issues: single family, multi family, high density, community housing, micro housing, affordable housing, informal housing. Socio cultural & economic facets of housing. Urban and rural housing stock: adequacies and amenities. Demand & Supply Assessment - Factors of influence - Housing quality and its determinants. Market rate development and housing. .					
Evolution of Housing Trends Industrialization, modernity, modularity and housing. Participatory housing. Charles Correa's housing and urbanization. Affordable housing case studies.					
Emerging Practices in Urban Housing Alternate housing models: Commune, Co-Housing, Cooperatives, Hyper Housing, Multi-cultural Housing, lab rooms and cyber homes, micro housing, Network housing, hybrid buildings, individual sheltered residences, bio homes for senior citizens.					
Housing Programmes and Institutional Framework Role of Government and public agencies in Housing Development. National housing policy. Five Year Plans and their impact on housing. National schemes: JNNURM, IHSDP, AMRUT, etc. Site and services Schemes: MUDP I & II, Cooperative Housing. Role of housing agencies. Basic housing standards and URDPFI Guidelines.					
Weightage: Continuous Internal Assessment: 40%, End Semester Examinations:60%.					
Assessment Methodology: Two Assessments with equal weightage. One Assessment as Internal written Test /Examination (50%), second as Assignment (50%) of any mode such as study, seminar, and or a combination of modes, etc.					
References: <ol style="list-style-type: none"> Tighe, Rosie and Mueller. The Affordable Housing Reader. Abingdon-On-Thames: Routledge, 2012 Graham Towers. Introduction to Urban Housing Design. Abingdon-On-Thames: Routledge, 2005 Correa, Charles. Housing and Urbanization: Building Solutions for People and Cities. Thames & Hudson, 2003 CarlesBronto. Innovative Public Housing. Gingko Press, 2005 Jingmin ZHOU. Urban housing Forms. Oxford: The Architectural Press, 2005 Manuel Gausa and Jaime Salazer. Housing+ Single Family Housing. Basel: Birkhauser- Publishers for Architecture, 2005 					
E-Resources: <ol style="list-style-type: none"> https://mohua.gov.in/upload/uploadfiles/files/NUHHP_2007.pdf https://mohua.gov.in/cms/urban-and-regional-development-plans-formulation-and-implementation.php https://amrut.gov.in/ https://charlescorreafoundation.org/ 					

UR25202	Urban Form Performance and Simulation Audit	L	T	P/S	C
		3	0	0	3
Course Objectives: <ul style="list-style-type: none"> To understand impact of climate change on urban environment To develop skill-sets to assess, audit urban form based on environmental design criteria 					
Climatology of Contemporary Cities Climate change and the city. Urban environmental design parameters: environmental planning, envelope design, solar envelope and mutual shading, airflow patterns, humidity, anthropogenic heat production, air pollution, urban morphology, urban heat island and water management.					
Urban Form Performance Assessment Integrated environmental design. Environmental assessment methods: cognitive, empirical and simulation analysis. Case studies of integrated design in Master Planning.					
Microclimatic Considerations and Environmental Strategies Urban morphology. Solar access and solar control, thermal inertia. Ventilation: wind protection, natural cooling, surface properties, solar reflectance, absorbance and transmittance. Water bodies- vegetation- thermal emissivity-thermal resistance and thermal capacity. Additional elements and transitional spaces. Adaptive skins. Adaptive topographies.					
Environmental Assessment Methods and Modelling at Urban Scale Basics of cognitive mapping and story boarding of environmental performance. Introduction to empirical assessment. Data collection and analysis, Simulation and experimental techniques for urban form audit and assessment with software.					
Live Study Cognitive, empirical and simulation assessment of a select live case study and presentation.					
Weightage: Continuous Internal Assessment: 40%, End Semester Examinations:60%.					
Assessment Methodology: Two Assessments with equal weightage. One Assessment as Internal written Test /Examination (50%), second as Assignment (50%) of any mode such as study, seminar, and or a combination of modes, etc.					
References: <ol style="list-style-type: none"> Yannas, S. Towards More Sustainable Cities. Solar Energy, Vol.70, no. 3 pp281-294. Elsevier Science Ltd. 2001 Corbella, O.D., V.N. Corner and S. Yannas. Outdoor Spaces and Urban Design. Proc. PLEA 2001 Florianopolis, pp655-659, 2001 Yannas, S. Towards Environmentally- Responsive Architecture. Proc. PLEA 2003 Santiago de Chile, 2003 Chatzidimitriou, A. and S. Yannas. Microclimatic Studies of Urban Open Spaces in Northern Greece. Proc. PLEA 2004, Eindhoven. Meteotest (2003). Meteoronorm v5.0 Global Meteorological Database for Solar Energy and Applied Climatology. Meteotest, Bern. 					
E-Resources: <ol style="list-style-type: none"> https://unhabitat.org/topic/climate-change https://www.sciencedirect.com/topics/earth-and-planetary-sciences/urban-heat-island https://www.epa.gov/heatislands https://climate.onebuilding.org/ 					

MH25C03	Geographical Information Systems For Built Environment	L	T	P/S	C
		1	0	3	4
<p>Course Objectives:</p> <ul style="list-style-type: none"> 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. 					
<p>Introduction to G.I.S: 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.</p>					
<p>Spatial and Attribute Data Input: 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</p>					
<p>Spatial Analysis Using GIS: Generation of 3-D Model in GIS. Performing overlay functions. Manipulating attribute data. Preparation of Existing Land use. Map and report generation. Network Analysis.</p>					
<p>Modelling the Macro Environment: 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.</p>					
<p>Weightage: Continuous Internal Assessment: 50%, End Semester Examinations: 50%.</p>					
<p>Assessment Methodology: Three Assessments with equal weightage. One Assessment as Internal written Test /Examination (33.33%), other two assessment (each assessment weightage - 33.33%) as continuous marking of the work and performance during the particular assessment period such as drawings, models, study, seminar, etc.,</p>					
<p>References:</p> <ol style="list-style-type: none"> Arthur. H. Robinson et al., 'Elements of Cartography', John Wiley & Sons, New York, 1995. Judith. A. Tyner, 'Principles of Map Design', The Guilford Press, New York, 2010. Ramesh Elmasri and Shamkant.B.Navate, 'Fundamentals of Database Systems', Pearson Education Limited, USA, 2010. Anji Reddy.M., 'Text book of Remote Sensing and Geographical Information Systems', B.S. Publications, Hyderabad, 2008. Michael Law and Amy Collins, 'Getting to know ArcGIS Pro', ESRI Press, USA, 2016. Paul. D. Zwick and Margaret.H. Carr, 'Smart Land-use Analysis: The LUCIS Model', ESRI Press, USA, 2007. David Maquire, Michael Batty and Michael F.Goodchild, 'GIS,Spatial Analysis and Modeling', ESRI Press, 2005. Cynthia A. Brewer, 'Designing Better Maps: A Guide for GIS Users' – 2nd Edition, ESRI Press, 2015. 					
<p>E-resources:</p> <ol style="list-style-type: none"> Longley, P. A., Goodchild, M. F., Maguire, D. J., & Rhind, D. W. (2005). <i>Geographic Information Systems and Science</i> (2nd ed.). Wiley. https://archive.org/details/geographicinforma0000long de By, R. A., et al. (2009). Principles of Geographic Information Systems. ITC, University of 					

Twente. https://webapps.itc.utwente.nl/librarywww/papers_2009/general/principlesgis.pdf (A free textbook developed for university-level GIS courses)

3. Nushi, B., & Bejleri, I. (2017). *The use of GIS for analysis and visualization of building energy consumption*. *IFAC-PapersOnLine*, 50(1), 11736–11741.

<https://doi.org/10.1016/j.ifacol.2017.08.2189>

4. UN-Habitat. (2015). *Using ICTs and GIS for Urban Planning and Service Delivery in the Developing World*. <https://unhabitat.org/books/using-icts-and-gis-for-urban-planning-and-service-delivery-in-the-developing-world/>

5. Pérez, D., & Ranasinghe, D. (2020). *Smart cities and the role of GIS in urban resilience and planning*. *World Bank Group Technical Report*. <https://openknowledge.worldbank.org/handle/10986/34744>

Course Outcomes

- Awareness of GIS and the context of its use for different purposes
- Knowledge of concepts, techniques, methods of GIS
- Ability to apply GIS for specific situations/ realms involving the built environment

UR25203	Urban Design Studio II	L	T	P/S	C
		0	0	10	10
<p>Course Objectives:</p> <ul style="list-style-type: none"> To understand urban design issues specific to contemporary cities To enable understanding of complex socio-economic parameters, that affect built environment and commons of cities. To develop appropriate analytical tools and design strategies, to address unique needs and aspirations of contemporary urban living. 					
<p>Contemporary cities are no longer defined by conventional urban form parameters, but shaped by flows: rapid urbanization via global and local flows of economy, people, networks, etc., Contemporary urban form is influenced by a distinct set of urban issues, needs and aspirations: it is imperative to ensure viable density, sustainability, essential life quotients of sense of place, belonging, identity and equity in urban development. In addition, land use needs to be seamlessly integrated with requisite infrastructure and existing communities. This studio seeks to equip students with the right tools and strategies, to propose future development scenarios for contemporary urban living and development scenarios.</p> <p>PROCESS AND SESSIONAL WORK</p> <p>In this studio, students will explore the unique range of land management issues that may occur in urban areas, shaped by flows - issues often related to growth patterns of the historic cores they feed off and their specific locations.</p> <p>Issues to be analyzed, may include:</p> <ul style="list-style-type: none"> Sustainable density vs. sprawl infrastructure provision and integration with land use Concomitant land use management Infrastructure framework and real estate development in continuity with local communities and settlements ecological planning of environmentally sensitive zones (such as flood plains of water bodies, wetlands and protected areas) Study of regulation and code-compliance quality built environments and commons safety and livability standards development codes for sustainability Infrastructural urbanism Frameworks for environmental compliance. 					
<p>Weightage: Continuous Assessment: 50%, End Semester Examinations: 50%.</p>					
<p>Assessment Methodology: Three Assessments with equal weightage (approx.33.33% each). Each assessment shall incorporate continuous marking of the work and performance during the particular assessment period.</p>					
<p>References:</p> <ol style="list-style-type: none"> Calthorpe Peter, Urbanism in the age of Climate Change, Island Press; 2 Edition, 2011 Banerjee Tridib, Loukaitou- Sideris Anastasia, Companion to Urban Design, Abingdon-On- Thames: Routledge 2014 Charles Correa, Housing and Urbanization, London: Thames & Hudson, 1999 Long, Ying and Zhang, Enjia. Data Augmented Design: Embracing New Data for Sustainable Urban Planning and Design (Strategies for Sustainability). Springer, 2020 Montgomery, Charles. Happy City: Transforming our lives through Urban Design. London: Penguin, 2015 Cooper Marcus, Claire. Housing as if people mattered: site design guidelines for medium density housing. Berkeley: University of California Press, 1988 					

7. Guallart, Vincent. Sociopolis: Project for a city of the Future. ACTAR, 2005

E-Resources

1. <https://unhabitat.org/topic/urban-planning-and-design>
2. https://niti.gov.in/planningcommission.gov.in/docs/reports/genrep/rep_uhsd.pdf
3. <https://smartnet.niua.org/>
4. <https://www.planetizen.com/>

Semester III

UR25301	Sustainable Urban Development	L	T	P/S	C
		3	0	0	3
<p>Course Objectives:</p> <ul style="list-style-type: none"> To understand challenges pertaining to climate change & sustainability, in a regional urban scale and sustainable design goals To learn analysis tools and policy mechanisms to ensure resilient urban settlements 					
<p>Climate change and sustainability:</p> <p>Exigencies of climate change. Global warming and challenges for cities. Brundtland report - Kyoto protocol – UNFCCC - SDG 2019 - Coastal Cities. Integrated, inclusive, sustainable urban development. Science of Cities - Triple bottom of sustainability. Role of UN in climate change.</p>					
<p>Green urbanism:</p> <p>Climatology of contemporary cities - Urban Heat Island - Microclimatic considerations in urban design - Eco Urbanism cores - Sponge cities.</p>					
<p>Sustainability analysis Tools:</p> <p>Studying the application and use of SDGs. PEST and PESTAL economic goals. Life cycle assessments of resources: ecological & carbon foot print, benefit cost analysis & impact assessment of a site. Circular Economy. Land suitability, vulnerability assessment. Pollution modelling. Environmental assessment reports.</p>					
<p>Sustainable Policy:</p> <p>UN's initiative towards sustainable cities to be explored through Indian examples. Well planned, inclusive and integrated urban growth frameworks - sustainable transport, urban systems and public services, safety, waste management. Government of India environmental regulations for Greenfield and brownfield development, water body's protection, coastal regulation zoning, emission and pollution controls. Energy standards for Indian cities- cases studies. Smart city projects.</p>					
<p>Resilient Urbanism:</p> <p>Regional planning and technology integration to combat climate change, pandemics and global emergencies. Best practices in ecological urbanism and urban resilience - 100 resilient cities, sponge cities. Social networks and cartography. Community based environmentalism-relevant case studies.</p>					
<p>Weightage: Continuous Internal Assessment: 40%, End Semester Examinations: 60%.</p>					
<p>Assessment Methodology: Two Assessments with equal weightage. One Assessment as Internal written Test /Examination (50%), second as Assignment (50%) of any mode such as study, seminar, and or a combination of modes, etc.</p>					
<p>References:</p> <ol style="list-style-type: none"> Dominique Gauzin–Muller, 'Sustainable Architecture and Urbanism: Concepts, Technologies and Examples', Basel: Birkhauser, 2002. Farr, Douglas. Urban Design with Nature. Hoboken: John Wiley & sons, 2008Cohen, Steven, The Sustainable City, Columbia University Press, 2017. Dominique Gauzin–Muller, 'Sustainable Architecture and Urbanism: Concepts, Technologies and Examples', Birkhauser, 2002. Calthorpe, Peter. Urbanism in the age of Climate Change. Washington DC: Island Press, 2011. 					

E resources

1. <https://sdgs.un.org/goals>
2. <https://unfccc.int/>
3. <https://www.100resilientcities.org/>
4. <https://smartcities.gov.in/>

UR25302	Urban Design: Practice and Processes	L	T	P/S	C
		3	0	0	3
<p>Objective</p> <ul style="list-style-type: none"> To familiarize students with current trends in Urban design research and practice. To enable understanding of various stakeholders & mechanisms in urban design practice. 					
<p>Emerging Trends: Theories of community based social change, gentrification, global and local challenges facing cities, stake holders and agencies. Emerging models and its application in urban design.</p>					
<p>City and Its Agencies: Defining the role of state and central governments and other stake holders. Local bodies and state agencies: municipal corporations - urban development boards - transport departments - housing board - Water Supply and sewerage agency - Urban Finance and Infrastructure Development agencies - Tourism department - ASI and other heritage agencies.</p>					
<p>Urban Design Practice: Project planning and management: technological challenges, limitations of IoT, equity issues. Urban Design Processes: Documentation, mapping, assessment methods, stakeholder identification, and bottomup approach, policy formation, program delineation, and design development. DPR - Public presentations and iteration - Funding and resource mobilization - Implementation mechanisms. Allowance for change and growth-urban management. Inter-agency coordination - Contract negotiation - Resolution and management - Funding mechanism - Conflicts in funding - Land use management - Leadership change - Legal issues.</p>					
<p>Tactical Urbanism: Issues of Urban design practice: political will - proactive citizenry – media - civic agencies - citizen groups. Bottom up approach - community participation - Information dissemination. Access to maps, cartography, data and other resources for base maps and research. Data collection and questionnaires. Participatory design charters. Research dissemination through critical and op-ed writing. DIY Urbanism.</p>					
<p>Futuristic cities: Creating a new glossary for cities. Cities of the future. Role of technology in urban design and governance. Resilient cities. Global village and local cultural aspirations. Social media and city. Big Data and cities. HDI: Happiness, livability indices, society and city.</p>					
<p>Weightage: Continuous Internal Assessment: 40%, End Semester Examinations: 60%.</p>					
<p>Assessment Methodology: Two Assessments with equal weightage. One Assessment as Internal written Test /Examination (50%), second as Assignment (50%) of any mode such as study, seminar, and or a combination of modes, etc.</p>					
<p>References:</p> <ol style="list-style-type: none"> Hideaki Hareguchi, A Comparative Analysis of 20th Century Houses, Academy Editions, 1988. Sam F.Miller, Design Process: A Primer for Architectural and Interior Design, Van Nostrand Reinhold, 1995. Ernst Neuferts Architects Data, Wiley, 2012. Philip Plowright, 'Revealing Architectural Design: Methods, Frameworks and Tools', Routledge, 2014. 					

E resources

1. <https://tacticalurbanismguide.com/>
2. <https://futurecities.catapult.org.uk/>
3. <https://www.planetizen.com/>
4. <https://www.smartcitiesdive.com/>

UR25303	Dissertation	L	T	P	C
		0	0	4	4
<p>Each student is required to prepare a dissertation on a subject concerning Digital Architecture and design media, under the guidance of an advisor, approved by the department.</p> <p>Course Objectives:</p> <ul style="list-style-type: none"> • To expose the students to the various thrust areas in Digital architecture. • To inculcate the spirit in the students to research in the field of Digital architecture by providing opportunities to read on various issues. • To help students enhance their technical writing and interdisciplinary research skills. 					
<p>Process</p> <p>The primary objective of the dissertation is to provide an opportunity to each student to undertake in-depth and original study research in the field of their interest. It also provides an opportunity to synthesize knowledge and skill-sets, acquired through theory courses and digital architecture studios.</p> <p>Dissertation is a self-directed exploration of any topic of the students' choice – a written document of the student's findings in a chosen specific area of interest within the realm of digital architecture through a rigorous process of original research. The subject of the dissertation may be theoretical, analytical, computational, comparative or interdisciplinary research concerning digital processes in the architectural domain (topic to be approved by departmental jury). The process would consist of choosing of an area of interest/challenge, phasing out primary studies, clarifying intent, identifying methodologies to approach and achieve the intent, exploring ways of primary data collection (reading, first hand studies, experimentation, documentation, computation, programming, digital analysis tools, interviews and so on), structuring the information, analyzing and interpreting it, and finally concluding with well-argued inferences. The dissertation should serve to concretize notions and ideas relating to digital architecture and/or the concerns and challenges of architecture and design in today's digital world.</p> <p>The study must comprise of an aim, the objectives, the scope and limitations of their dissertation, hypothesis (if any), methodology followed by extensive review of literature and case studies through references and documentation. The analysis of the work must be substantiated either parametrically, empirically or through extensive arguments. A dissertation could serve as a prelude to the Thesis preparation and gives the student scope for independent study and opportunity to explore specific area of interest which will form the basis of his/ her design thesis project in the next semester. The topic will have to be approved at the start of the semester and the progress of work will be reviewed periodically, culminating in a viva-voce to a jury at the end of the semester.</p>					
<p>Weightage: Continuous Internal Assessment: 50%, End Semester Examinations: 50%.</p>					
<p>Assessment Methodology:</p> <p>Three Assessments with weightage of 30%:30%:40% for the first, second and third assessments respectively.</p> <p>Each assessment shall incorporate continuous marking of the work and performance during the particular assessment period. The first, second and third assessment shall be with the proportion of 15:15:20 respectively.</p>					

References:

1. Borden, Ian and Kaaterina Rue diRay. The Dissertation: An Architecture Student's Handbook. Oxford: The Architectural Press; 2006
2. JA Smith, P Flowers, M Larkin. Interpretative Phenomenological Analysis: Theory, Method and Research (English) FIR Edition. New Delhi: Sage Publication, 2009.
3. W Creswell, John. Research design: Qualitative, Quantitative and Mixed Methods Approaches. New Delhi: Sage Publications, 2011.
4. Groat, Linda and Wang, David. Architectural Research Methods – 2nd edition. Hoboken: John Wiley & Sons Inc., 2013.
5. Ranjith Kumar, Ranjit. Research Methodology- A step by step guide for beginners-3rd Edition. New Delhi: Sage Publications, 2011

E - Resources:

1. <https://www.coursera.org/learn/digital-transformation-in-architecture>
2. <https://ocw.mit.edu/courses/architecture/4-251-architecture-and-digital-culture-spring-2014/>
3. <https://www.e-architect.com/>
4. <https://scholar.google.com/>

UR25304	Urban Design Studio III	L	T	P/S	C
		0	0	10	10
<p>Objectives</p> <ul style="list-style-type: none"> This studio seeks to equip students with understanding of macro urban issues, global urban design challenges/trends and their effect on various scales of local urban intervention. This studio will aid students in understanding the role of sustainable, resilient, regional infrastructure systems and technology in inclusive development. 					
<p>Course Outline</p> <p>Emerging technologies, global trends and exigencies rapidly transform cities: such urban transformations are at best inclusive and integrated.</p> <p>This studio will examine specific global urban design challenges, which require comprehensive understanding at a global and regional scale: it will investigate the same in various local contexts such as:</p> <ul style="list-style-type: none"> city wide natural systems, ecological zones (might include riparian corridors, lakes and water networks, coastal resilience etc.,) infrastructural urbanism, resilience and regional networks integrative governance frameworks and technology for inclusive, participatory community development Happiness and livability. <p>Process and sessional work</p> <p>Students will analyze global trends and issues through literature review and research. They will localize their research through experiential mapping, physical mapping, diagramming, data visualization and analysis, combined with parametric analysis, GIS data sets (density analysis, spatial statistics and spatial relations to present development scenarios) and development indices, to propose regional solutions for global urban issues. They will evaluate resilient growth frameworks for inclusive, integrated urban development.</p> <p>Studio projects may include but not limited to - Ecological mapping and scenarios for riparian corridors rejuvenation, Climate change and coastal city resilience, building urban resilience through revitalization of built, natural and cultural landscapes, cities-communities- happiness quotient - urban heat island and micro climate analysis - infrastructural urbanism and regional transportation studies - social-public health infrastructure and pandemic response - regional development policy - participatory and inclusive planning with technology, etc.</p>					
<p>Weightage: Continuous Assessment: 50%, End Semester Examinations: 50%.</p>					
<p>Assessment Methodology: Three Assessments with equal weightage (approx.33.33% each).</p> <p>Each assessment shall incorporate continuous marking of the work and performance during the particular assessment period.</p>					
<p>References:</p> <ol style="list-style-type: none"> Stimmel, Carol. Building Smart Cities: Analytics, ICT, and Design Thinking. Abingdon-On-Thames: Auerbach Publications 2015 Rithchie. A. Sustainable Urban Design: An Environmental Approach. Abingdon: Taylor & Francis, 2000. Maibritt Pedersen Zari, Regenerative Urban Design and Ecosystem Biomimicry. New York: Routledge Research in Sustainable Urbanism, 2019 					

4. Dominique Gauzin–Muller, 'Sustainable Architecture and Urbanism: Concepts, Technologies and Examples', Basel: Birkhauser, 2002.
5. Cohen, Steven, The Sustainable City, Columbia University Press, 2017
6. J. Mitchell, Mitchell. City of Bits: Space, Place and the infobahn. Cambridge: The CAMBRIDGE: THE CAMBRIDGE: MIT PRESS, 1996.
7. Batty, Michael. Inventing Future Cities. Cambridge: The CAMBRIDGE: THE CAMBRIDGE: MIT PRESS, 2018.

E resources

1. <https://www.resilientcitiesnetwork.org/>
2. <https://urbansustainabilityexchange.org/>
3. <https://data.unhabitat.org/>
4. <https://www.worldbank.org/en/topic/urbandevelopment>

UR25305	Internship Training	L	T	P/S	C
		0	0	0	2
<p>Objectives</p> <ul style="list-style-type: none"> • This studio seeks to equip students with understanding of macro urban issues, global urban design challenges/trends and their effect on various scales of local urban intervention. • This studio will aid students in understanding the role of sustainable, resilient, regional infrastructure systems and technology in inclusive development. 					
<p>Course Content</p> <p>The Practical Training would be done in government agencies / development firms and architecture – master planning firms. The progress of practical training shall be assessed periodically internally through submission of log books and with portfolio of work done by the students in terms of drawings, reports, etc., along with the regular progress report from the employers.</p> <p>The students would be evaluated based on the criteria related to their contribution in the office some of which are given below.</p> <ul style="list-style-type: none"> • Understanding and involvement in the framing project objectives, policy perspectives and delineation of project scope and limitations. • Understanding of funding mechanisms and economic liabilities for urban projects. • Contribution in projects on the basis of data collection, collation and analysis, design and presentation, embedded technology, etc. • Adherence to time schedule, overall responsibility and professional conduct. • Ability to carry out the instructions on preparation of schematic drawings, presentation drawings, working drawings and skill in this regard. • Ability to work as part of a team in an office and contribute to related activities. • Ability to participate in client meetings, stake-holder consultations and public opinion discussions. • Involvement in supervision at project site. • Involvement/ initiative/ participation in any other aspects during the course of the training. <p>At the end of the Practical Training, a portfolio of work done during the period of internship along with certification from the office has to be submitted for evaluation through a viva voce examination.</p>					
<p>Weightage: End Semester Examinations: 100%.</p>					

Semester IV

UR25401	Thesis Project	L	T	P/S	C
		0	0	20	20
<p>Objectives</p> <ul style="list-style-type: none"> • To integrate the knowledge gained in the previous semesters with respect to issues/ tools of urban design. • To understand and identify issues appropriate to a particular project or urban area, through independent thinking as well as to design in a manner appropriate to the project context. 					
<p>The students will synthesize the areas of knowledge, skills and techniques acquired in the various courses of the previous semesters through a thesis project of their choice. This thesis project would be an urban design project with a strong research component. The project would desirably extend the critical position developed within the theory and studio projects as well as dissertation. The scale of the project could extend from urban infill projects with an impact on the larger urban fabric, to large-scale urban planning scenarios. The initial process shall be rigorous, incorporating background research on the topic, case studies, documentation of project issues, thorough analysis of physical, social and cultural context, tangible and intangible factors, site and building information, programming. The process would culminate in design interventions at scales appropriate to the topic. The project shall desirably have the potential to serve as a starting point for practice and/ or further research.</p> <p>Students will submit a detailed proposal on their topic of interest(s). The Proposal shall be approved by the thesis review committee. The thesis project will be reviewed periodically by the review committee. At the end of the semester, the final thesis will be submitted and presented through a viva voce examination before a jury.</p>					
<p>Weightage: Continuous Internal Assessment: 50%, End Semester Examinations: 50%.</p>					
<p>Assessment Methodology: Three Assessments with weightage of 30%:30%:40% for the first, second and third assessments respectively.</p> <p>Each assessment shall incorporate continuous marking of the work and performance during the particular assessment period. The first, second and third assessment shall be with the proportion of 15:15:20 respectively.</p>					

Professional Elective Courses

UR25C03	Culture of Public Spaces	L	T	P/S	C
		3	0	0	3
<p>Objective</p> <ul style="list-style-type: none"> To understand the role of art in articulating city culture. To understand Cultural memory and art form associations in cities To understand the way public spaces in Indian cities have been used, appropriated and conceived. To understand the role of art in altering meanings and perceptions of public spaces 					
<p>Production of Spaces – Public Space: Space: relative and absolute space, production of space in books, movies and literature. Definitions of public spaces, history of public spaces, typologies and characteristics of public spaces: parks, streets, plazas, Indian bazaars, etc.</p>					
<p>City, Meanings and Memory: Regeneration, culture and the city. Understanding urban popular cultural influences: Traditions –folklore - histogenesis. Urban landscape as public history. Formation of public space: power, resistance and meaning.</p>					
<p>Performativity and Temporality In Spaces: Everyday activities in the city: space, body, signs, rituals. Art and the city: role of art festivals in cultural shifts. Religion, ritual space, festival and spectacle in the city. Case studies of Kala ghoda festival, Pongal fairs and festivals, arupathumooavar, santhanakoodu and velankanni</p>					
<p>Activism and Public Spaces: Theory of democratic public spaces: democratic theory, democratic performances. Theorizing and evaluating public spaces: place and politics, democratic assemblies, protests and the public sphere, city and its representative space. Global case studies of urban space, protests and activism</p>					
<p>Consumption of Urban Spaces: Visual, sensory and experimental consumption of urban spaces. Digital culture and virtual consumption of spaces. Branding of cities and their urban spaces. Case studies of Shanghai, Time Square, Paris, Marina beach, George Town, Chennai</p>					
<p>Weightage: Continuous Internal Assessment: 40%, End Semester Examinations: 60%</p>					
<p>Assessment Methodology: Two Assessments with equal weightage. One Assessment as Internal written Test /Examination (50%), second as Assignment (50%) of any mode such as study, seminar, and or a combination of modes, etc.</p>					
<p>References:</p> <ol style="list-style-type: none"> Ritzer, George. Postmodern Social Theory. Beijing: Beijing da xuechu ban she. 2004 Sadler, Simon. Situationist City. Cambridge: MIT PRESS,1998. Storey, John. Cultural Theory and Popular Culture: An Introduction. Abingdon-On-Thames: Routledge, 2018. Neal, Zachary “Locating Public Space” in Antony Orum and Zachary Neal, Eds. Common Ground? Readings and Reflections on Public Space, New York: Routledge, 2010 Lefebvre, Henri. Toward an Architecture of Enjoyment. Minneapolis: University of Minnesota Press, 2014. Harvey, David. Spaces of Hope (California Studies in Critical Human Geography). Berkeley: University of California a Press, 2000 					

E resources

1. <https://www.projectforpublicspaces.org/>
2. <https://www.urbanomnibus.net/>
3. <https://thefunambulist.net/>
4. https://www.ted.com/playlists/394/the_urban_landscape

UR25C01	Quantitative Techniques and Data Representation	L	T	P/S	C
		3	0	0	3
<p>Objectives</p> <ul style="list-style-type: none"> To acquire knowledge in statistical and numerical techniques and to take up quantitative analysis and research To provide in-depth understanding of various research methods in the field of planning and urban design 					
<p>Statistical Methods: Data: Statistical and Numerical data. Types of data measurement scale – Nominal, ordinal, interval, ratio, Variables. Discrete, continuous- Data collection, coding and decoding, methods, tabulation and graphic presentation of data. Frequency distribution. Measures of central tendency: mean, median, mode. Measures of dispersion, Correlation and Regression. Introduction to spread sheets and statistical software – SPSS, Data Fit etc.</p>					
<p>Hypothesis Testing: Sampling Distribution. Test based on Normal, t, Chi-square and F-Distributions. Discrete random variables, Completely Randomized Design. Randomized Block Design. Latin Square Design. ANOVA.</p>					
<p>Quantitative Techniques in Planning & Demographic Analysis: Elementary association models and decision making. Index numbers, weighted and un-weighted index numbers. Application of index number in spatial planning. Calculation techniques of vital events. Methods of demography and population studies, population projections, introduction to Census data and sampling Techniques.</p>					
<p>Forecasting and Time Series Analysis: Time series forecasting- line chart, curve fitting. Function approximation – approximation theory and numerical analysis, interpolation, extrapolation, pattern recognition, econometrics, segmentation, Uni-variate linear and nonlinear measures and bi-variate measures. Visualization Charts, Braided graphs, Line charts, Slope graphs, Gap Chart, Horizon graphs, reduced line chart (small multiples), Silhouette graph, Circular silhouette graph etc.</p>					
<p>Data Representation: Data Ideograms and the Language of Symbols- Braille, Morse Code, Sign, and Gesture Data Abstraction, Task Abstraction, Common Visualization Idioms such as Bar Chart, Pie Chart and Coxcomb Plot, Line Chart, Area Chart etc., -Spatial data, networks, trees - Making Maps-encoding, Stacked & Grouped data, Manipulate View, Facet into Multiple Views, Case Studies in Visualization and Information tools</p>					
<p>Weightage: Continuous Internal Assessment: 40%, End Semester Examinations: 60%</p>					
<p>Assessment Methodology: Two Assessments with equal weightage. One Assessment as Internal written Test /Examination (50%), second as Assignment (50%) of any mode such as study, seminar, and or a combination of modes, etc.</p>					
<p>References:</p> <ol style="list-style-type: none"> 1. Agarwal B L. Programmed Statistics. New Delhi: New Age International Publishers, 2007 2. C. Acock, Alan. A Gentle Introduction to STATA. Revised Third Edition. 2012 3. Wooldridge. Introductory Econometrics: A Modern Approach. Noida: Thomson Press, 2011 4. F. Punch, Keith. Introduction to Social research: Qualitative and Quantitative Approaches. London: Sage Publications, 2013 5. 3. W Creswell, John. Research design: Qualitative, Quantitative and Mixed Methods Approaches. New Delhi: Sage Publications, 2011. 					

6. Evergreen, Stephanie DH. *Effective data visualization: The right chart for the right data*. New Delhi: Sage Publications, 2019.

E resources

1. <https://www.khanacademy.org/math/statistics-probability>
2. <https://www.gapminder.org/tools/>
3. <https://flowingdata.com/>
4. https://owl.purdue.edu/owl/research_and_citation/using_research/statistics_in_research.html

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.

Introduction to Soft Skills and Personality

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.

Interpersonal Communication

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.

Organisational Communication

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.

Advanced Reading and Writing Skills

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.

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.

Weightage: Continuous Internal Assessment: 50%, End Semester Examinations: 50%

Assessment Methodology: Three Assessments with weightage of 30%:30%:40% for the first, second and third assessments respectively. Each assessment shall incorporate continuous marking of the work and performance during the particular assessment period. The first, second and third assessment shall be with the proportion of 15:15:20 respectively.

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.

UR25001	City Form Development in Asia	L	T	P/S	C
		3	0	0	3
<p>Objectives</p> <ul style="list-style-type: none"> • Understanding factors that shaped morphology of Asia. • Understanding future trajectories of mega cities of Asia. 					
<p>West Asia: Birth of cities in ancient west Asia. Influence of Roman and Byzantine empires. Urban structure of West Asian Islamic cities. Colonial urban development. Oil boom and mega city complexes. Globalization, urban spectacle, leisure, tourism and city form in west Asia.</p>					
<p>South Asia: Archaeology and ancient city form. Settlement types: Port cities, fortified cities, trade towns, Buddhist learning complexes, Bhakti movement and ritual cityscapes. Records, inscriptions, texts, literature and folklore on cities and culture. Defensive and leisure type forms, public spaces in Indian context Colonial Urban Form. Post-independence urban planning and growth. Globalization and urban space. Rethinking mega city regions of South Asia.</p>					
<p>Central Asia: Mongol Empire: Yurt camps, Micro Oasis and cities. Chinese society, culture and urban form. Cosmic Diagram, three tiers of settlement and prototype Chinese urban form, Well-field system and the Artificer's record. Imperial era urban planning: regional cities, colonial cities, city states and Imperial city models. Pre-modern, socialist and post socialist city form. Globalization, morphological shifts and development of business districts</p>					
<p>East Asia: Early cities. Srivijaya Empire and city form. Sultanate of Malacca and Singapore. Japanese urban planning: Toshikeikaku (Urban Planning) and Machizukuri (Community- Building). Colonial shop house districts. Post-colonial urban development. Hyper density and contemporary East Asian cities. Rise of Asian economy, tourism and city regions.</p>					
<p>Mega Cities and Futuristic Urbanism Case studies of key urban challenges, policies and prospects of Megacities of Asia: Shanghai, Mumbai, Singapore, Hong Kong, Colombo, Dubai, NCR (Delhi, Gurgaon, Noida).</p>					
<p>Weightage: Continuous Internal Assessment: 40%, End Semester Examinations: 60%</p>					
<p>Assessment Methodology: Two Assessments with equal weightage. One Assessment as Internal written Test /Examination (50%), second as Assignment (50%) of any mode such as study, seminar, and or a combination of modes, etc.</p>					
<p>References:</p> <ol style="list-style-type: none"> 1. Nilakandasastri.K.A. 1995. History of South India from Prehistoric times to fall of Vijayanagar, Fourth Edition. Chennai: Oxford University Press, 1997 2. Champakalakshmi.R. Trade, Ideology and Urbanization. New Delhi: Oxford University Press, 1997 3. Coningham, Robin and Young, Ruth. The Archaeology of South Asia: From the Indus to Asoka, c.6500 BCE–200 CE (Cambridge World Archaeology). Cambridge: Cambridge University Press, 2015 4. Lim, William SiewWai, , Author, Lim, William SiewWai, and Asian Urban Lab. <i>Public Space in Urban Asia</i>. Singapore: World Scientific, 2014. 					

5. Dutt, Ashok K. *The Asian City : Processes of Development, Characteristics, and Planning*. Dordrecht ; Boston: Kluwer Academic, 1994.
6. Al-Asad, Mohammad, Mehrotra, Rahul, Derakhshani, Farrokh, Mostafavi, Mohsen, and Aga Khan Award for Architecture , Issuing Body. *Shaping Cities : Emerging Models of Planning Practice*. Berlin, Germany: HatjeCantzVerlag GmbH, 2016.

E resources

1. <https://www.metropolis.org/>
2. <https://www.unhabitat.org/>
3. <https://www.asianurbancentre.org/>
4. <https://www.ucl.ac.uk/bartlett/casa/>

UR25002	Human Settlements	L	T	P/S	C
		3	0	0	3
<p>Objectives</p> <ul style="list-style-type: none"> To provide awareness on evolution of settlements from various eras & categories. To make students understand the importance of land Economics as a development tool. To familiarize students on the definitions & patterns of human settlements. 					
<p>Introduction: Ekistics- Doxiadis, Human Settlements: Terminologies and definitions types, patterns, indicators of the Settlements, Chronological pattern of settlements, settlements and basic services anthropology and Ethnic groups. Determinants of settlement form: mobility, socio cultural, climate, technology, etc.</p>					
<p>Evolution of Settlements Historical evidence of difference settlements. Civilization and the Settlement Pattern. Impact of urbanization/ industrialization on the planning approaches. Settlements – Type and structure of humansettlements. Traditional settlement planning principles of Vedic period, Indus valley, Jaipur, Madurai etc. and its continuing impact on settlement form and growth.</p>					
<p>Land Economics & Surveys Study and analysis of existing settlements - methodology of conducting diagnostic surveys and studies - land use survey - density survey - FSI survey - traffic surveys - presentation of data. Economies: Concepts, issues, aspects - Land & housing economics – valuation – rent - sinking fund - development cost - sources of finance - market characteristics - key constraints. Evaluation Tools: Survey techniques, Evolution analysis & visual analysis.</p>					
<p>Urban Renewal and Planning Technique Urbanization and urban growth, impact on physical growth of urban settlement. Causes and consequences of urban blight and obsolescence. Rebuilding our cities: Penalty for neglect, Urban renewal, Necessity and Advantages of urban renewal- various steps in urban renewal program, JNNURM, AMRUT case examples. Town planning theories & models: Geddes – Howard – Perry – Corbusier – Batty. Different types of land use development model.</p>					
<p>Legislation, Bye Laws & New Horizons: Constraints& possibilities. Legislation, DCR, Acts & Bye laws, Strategies, Government & non-governmental agencies. Changing nature of human settlements/ Impact of global economy, trade, and information and communication technology. Emergent settlement forms: self-sustained communities, SEZ, transit development, integrated townships. Case studies.</p>					
<p>Weightage: Continuous Internal Assessment: 40%, End Semester Examinations: 60%</p>					
<p>Assessment Methodology: Two Assessments with equal weightage. One Assessment as Internal written Test /Examination (50%), second as Assignment (50%) of any mode such as study, seminar, and or a combination of modes, etc.</p>					
<p>References:</p> <ol style="list-style-type: none"> Government of India. "Report of the National Commission on Urbanisation". New Delhi, 1988. Hansen N., "Regional Policy and Regional Integration", Edward Elgar, UK, 1996. 					

3. Sandhu. R. S. Sustainable Human Settlements-Asian Experience. New Delhi: Rawat publications, 2001.
4. Gastek.P. Living Plans: New concepts for advanced housing. Basel: Brikhauser publications, 2005.
5. Mumford L, 'The City in History', Harcourt Brace International,1968.
6. Morris A E J. History of Urban form before the Industrial Revolution. Abingdon-On-Thames: Routledge,1994

E resources

1. <https://www.unhabitat.org/>
2. <https://niua.in>
3. <https://smartnet.niua.org>
4. <https://www.townandcountryplanning.in>

UR25003	Urban Infrastructure: Resource And Resilience	L	T	P/S	C
		3	0	0	3
Objectives <ul style="list-style-type: none"> To enable students' understanding of quantitative & qualitative aspects of urban resources and infrastructure design & management. To familiarize students with need, demand & supply mechanisms of physical and social infrastructure. To enable understanding of resilient city infrastructure. 					
Water Systems: Natural and man-made water sources. Traditional water systems: <i>Ooruni, Kulam, Yeri, Thaangal, Kalannai, Step wells & vavs, Ghats, chirpron</i> . Colonial responses to water edges, piers and promenades. Modern water systems. Water as a generator of urban form. Economic and community based water issues. Politics of water. Modern water system typologies. Case studies of RAMSAR, IIHS, World Bank projects, etc.					
Urban Energy: Introduction to sources of urban energy systems: solar farms, wind farms, tidal, hydro, thermal, geothermal. Energy infrastructure: power grids, sub stations. Energy loss. Utility firms. Energy distribution and economic generation modules.					
Physical & Social Infrastructure Understanding of urban infrastructure. Qualitative and quantitative assessment - Need, Supply, Demand analysis of infrastructure: Water Supply, Sewerage, electricity, storm water drains, solid Waste Management, health, education, utilities & services, parks & open spaces - URDPFI standards.					
Transportation Urban mass transportation systems: urban transit problems, travel demand, types of transit systems, public, private, para-transit transport, mass and rapid transit systems, BRTS and Metro rails. IRC standards, UTTIPEC, ITDP etc.					
Resilient City Infrastructure: need for resilient cities. Integrative framework (society, environment, economy, governance, technology) for resilience. Strategies for mitigation of natural & man-made disasters. E-governance, IoT and big data in urban resilience. Case studies in Indian & global context.					
Weightage: Continuous Internal Assessment: 40%, End Semester Examinations: 60%					
Assessment Methodology: Two Assessments with equal weightage. One Assessment as Internal written Test / Examination (50%), second as Assignment (50%) of any mode such as study, seminar, and or a combination of modes, etc.					
References: <ol style="list-style-type: none"> Ed. Paranjpye, Vijay, Badam, Chakravarty. Traditional water management systems of India. New Delhi: Aryan Books International. 2006 Madireddy, Subba Rao. Water Conservation, management and analysis. New Delhi: Readworthy Publications Pvt Ltd, 2011 Mohanty, Prasanna. Financing cities in India. New Delhi: Sage publications India Pvt. Ltd, 2016. Eduardo Vasconcellos. Urban Transport Environment and Equity: The Case for Developing Countries. New York: Earth scan publications, 2001 					
E resources <ol style="list-style-type: none"> https://www.worldbank.org/en/topic/urbandevelopment https://iihs.co.in/ https://smartnet.niua.org/ https://ramsar.org/ 					

UR25004	Coding For Urban Design	L	T	P/S	C
		3	0	0	3
Objectives <ul style="list-style-type: none"> To train students in using simulation and coding, to understand and re-imagine urban scenarios To familiarize students with complex automation algorithms in big data crunching and urban projections. 					
Introduction : Role of Computational tools in understanding urban complexity- augmenting urban design work flows-streamlining complex and multidimensional planning tasks					
Application of Computational Tools : Application of computational tools in Urban design. Modelling and visualisation, simulation. Data driven and evidence based decision making process. Urban morphometric studies. Feasibility studies. Platform urbanism: scenario planning and design alternatives. public participation, monitoring and evaluation projects					
Open Source Coding Tools: Use of open source coding tools for Spatial data analysis, land use planning scenarios, density, place making, spatial econometrics, spatial demographics, Urban energy systems, Disaster management, TOD, livability, urban growth index, network analysis, urban mobility, urban accessibility, environmental modelling, collaborative mapping applications and policy compliance					
Case studies: Case studies and best practices in Urban design Projects using simulation and coding					
Weightage: Continuous Internal Assessment: 40%, End Semester Examinations: 60%					
Assessment Methodology: Two Assessments with equal weightage. One Assessment as Internal written Test /Examination (50%), second as Assignment (50%) of any mode such as study, seminar, and or a combination of modes, etc.					
References: <ol style="list-style-type: none"> Ayeni, Bola. Concepts and Techniques in Urban Analysis (Volume 17). Abingdon-On-Thames: Routledge, 2017 Tedeschi, Aruturo. AAD Algorithms-Aided Design: Parametric Strategies using Grasshopper. Paris: Le Penseur, 2014 Charytonowicz, Jerzy and Falcão, Christianne. Advances in Human Factors, Sustainable Urban Planning and Infrastructure: Proceedings of the AHFE 2018 International Conference on Human Factors in Intelligent Systems and Computing). New York: Springer, 2018 William J. Mitchell, City of Bits: Space, Place and the infobahn, Cambridge: MIT PRESS, 1996. Portmann Edy, Designing Cognitive Cities (Studies in Systems, Decision and Control Book 176) .New York: Springer, 2018 					
E resources <ol style="list-style-type: none"> ww.udxlab.com/ https://grasshopper3d.com/ https://github.com/urbansim/urbansim https://www.urbanobservatory.ac.uk/ 					

UR25005	Urban Economics, Sociology and Management	L	T	P/S	C
		3	0	0	3
Objectives <ul style="list-style-type: none"> To introduce the principles of economics, public finance and influence of market forces on urban planning To understand the role of sociology in planning and housing. To familiarize students with policies, urban management issues, funding agencies, fiscal tools and templates 					
Urban Economics: Introduction to Urban economics: Development of cities-city models, size and economic structure. Mono centric vs polycentric city models. Land use and spatial organization of activities within cities. Economies of agglomeration –Market access, connectivity, transportation, industry clusters, technology, taxation and public policy in the economic development of cities.					
Urban Sociology: Introduction to sociology and social science. Structure and variance of society. Sociology theories, concepts of urbanization. Urban migration and adjustment. Difference between urban and rural life styles. Urban poverty mitigation.					
Social Aspects of Urban Form: Societal impact on urban form, growth and planning policy. Urban conflict: social movements and politics. Neighborhood as social institution.73 rd and 74 th Amendment Act. Institutional mechanisms – Local governance and decentralization. Peri urban interface of Indian cities.					
Social Implications of Housing And Public Policy : Affordable housing: national income estimate – planning need, issues and five-year plans-national housing policy –Impact of speculative urbanism – welfare schemes- equitable and inclusive housing- URDPFI guidelines- public policy and real estate management – Role of UNCHS.					
Development Management and Finance: Key issues in urban development and management. National goals, policy and management strategies for urban planning projects – recommendations by national committees and task forces on development management. Role of national and international agencies for mobilization and management of urban development funds and resources. Evolution and structure of urban development bodies. Land based fiscal tools: area based development charges, municipal bonds, levies and betterment charges. Case studies of innovative and successful development management and finance models from South Asian cities and alternate models of economic development.					
Weightage: Continuous Internal Assessment: 40%, End Semester Examinations: 60%					
Assessment Methodology: Two Assessments with equal weightage. One Assessment as Internal written Test /Examination (50%), second as Assignment (50%) of any mode such as study, seminar, and or a combination of modes, etc.					
References: <ol style="list-style-type: none"> Narendra K. Singhi , Theory And Ideology In Indian Sociology, RewatPublication , Jaipur and New Delhi V Banerjee, Abhijit and Duflo, Esther. Poor Economics: rethinking poverty and ways to end it. Noida: Random House India, 2011 Jayapalan, N. Urban Sociology. New Delhi: Atlantic Publishers, 2002. 					

4. M. Haralambos, R. M. Heald. Sociology Themes and Perspectives. Oxford: Oxford University Press, 1980
5. Mohanty, P.K. Financing Cities in India: Municipal Reforms, Fiscal Accountability and Urban Infrastructure. New Delhi: Sage Publications, 2016

E resources

1. <https://ocw.mit.edu/courses/urban-studies-and-planning/>
2. <https://www.lincolnst.edu/>
3. <https://unhabitat.org/>
4. <https://smartcities.gov.in/>

Course 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.

Introduction

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.

Educational Psychology

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.

Understanding Learner Stages of Human Development

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.

Learning and Motivation

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.

Appreciation And Criticism

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.

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.

Weightage: Continuous Internal Assessment: 40%, End Semester Examinations: 60%.

Assessment Methodology: Two Assessments with equal weightage.

One Assessment as Internal written Test /Examination (50%), second as Assignment (50%) of any mode such as study, seminar, and or a combination of modes, etc.

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.

UR25006	Urban Landscapes	L	T	P/S	C
		3	0	0	3
<p>Objectives</p> <ul style="list-style-type: none"> • The course seeks to familiarize students with issues of urban ecology and landscape and address the same • To understand and address the issues of derelict urban pockets at different scale • To understand the various assessment and planning strategies in using landscape urbanism concept in addressing ecological crisis 					
<p>Introduction to Landscape: Introduction to landscape and ecology - purpose, domain and context. Understanding ecological concepts like population growth, regulation, carrying capacity, stability and resilience of ecosystem. Ecosystem degradation. City and pattern: hierarchy of streets and squares, spatial organization and land use, road networks and basic services, Open spaces within urban environment. Introduction to landscape ecology: landforms and landscape processes, pattern and structure of landscapes, concepts of patch, corridor and matrix, landscape dynamics and function.</p>					
<p>Landscape and urbanism: Landscape and urbanism. Relationship between man and nature. Analytical aspects of landscape - natural and cultural setting. Evolution of landscape planning – concepts and projects. Landscape planning models – METLAND concept. The purpose of landscape planning. Domain and context. Principles of planning. Procedure in landscape planning. Cultural, social and aesthetic value of urban spaces and its perception.</p>					
<p>Planning strategies: Influence of landscape design on our physical, visual environment. Tool to utilize the site resources, site analysis for larger developments. Planting strategies for various habitats: wooded areas, grassland and meadows, wetlands, coastal edges, waterside, etc. Wilderness areas. Site planning for larger developments: new towns and urban extensions, developments for tourism and eco-tourism. Case studies on landscape regional planning, policies - contemporary urban landscape issues at national and international levels. Role of IUCN and other bodies</p>					
<p>Landscape Assessment: Principles and procedure in landscape planning: problem defining, goal setting, inventory and analysis. Basics of collecting, analyzing, projecting and presenting data in landscape planning. Visual assessment and aesthetic dimension. Suitability analysis- techniques and models for assessing landscape resources. Land use impact assessment models. Model to assess ecological values. Land Evolution and site Assessment model (LESA).</p>					
<p>Derelict Lands: Derelict landscapes – Brownfields. Reclamation and restoration. Conservation and preservation of ecological fragile areas such as wetlands, creeks etc. National and International case studies.</p>					
<p>Weightage: Continuous Internal Assessment: 40%, End Semester Examinations: 60%</p>					
<p>Assessment Methodology: Two Assessments with equal weightage.</p>					

One Assessment as Internal written Test /Examination (50%), second as Assignment (50%) of any mode such as study, seminar, and or a combination of modes, etc.

References:

1. Waldheim, Charles. Landscape as Urbanism: A general theory. Princeton: Princeton University Press, 2016.
2. Hagan, Susannah. Ecological Urbanism: The Nature of the City. New York: Routledge, 2014.
3. Waldheim, Charles. The Landscape Urbanism Reader. Princeton: Princeton Architectural Press, 2012.
4. Palmboom, Frits. Drawing the Ground – Landscape Urbanism Today, Basel: Birkhäuser Architecture, 2010.
5. Duany Andres and Emily Talen. Landscape Urbanism and Its Discontents, Gabriola Island: New Society Publishers, 2013.
6. Wong, Ming, H, and Anthony Bradshaw D. The Restoration and Management of Derelict and degradedland. Berkeley: University of California Press, 2003.

E resources

1. <https://www.landscapeinstitute.org/>
2. <https://www.nps.gov/subjects/urban/index.htm>
3. <https://www.cbd.int/landscape/>
4. <https://www.thenatureofcities.com/>

UR25007	Urban Transportation Systems	L	T	P/S	C
		3	0	0	3
<p>Objectives</p> <ul style="list-style-type: none"> To gain specialized knowledge in urban transportation systems, techniques and their integration with built environment. To understand the importance of transit-oriented development. To understand the various standards, norms & assessment methods 					
<p>Introduction: Urban Transportation systems. Classification of transport systems. Technical characteristics of transport modes and systems. The nature of demand and supply of transport services-scope of urban transport planning. Interdependency of transport & land use. Approaches in transportation planning.</p>					
<p>Concept of Mobility: Introduction to Pedestrian, Motorized and Non-Motorized Vehicles. Mobility Measures- types of transportation survey related with traffic estimation. Projections - forecasting of traffic in-line with land use, TOD/ TAD, transit surveys.</p>					
<p>Stages in Urban Transportation: Trip Generation: Introduction, Definitions. Trip Purposes- Factors associated with Trip generation and Attraction. Method of analysis. Multi-linear Regression Analysis- Assumptions, Applications- Shortcomings (No Numerical Problems) Trip Distribution: Introduction, Methods, Growth Factor, Uniform growth factor, Average Growth factor, Fratar Methods and synthetic Analysis. Gravity Model. Simple Numerical Problems Trip Assignment: Definition, Applications, Resistance to travel, Minimum travel path tree. Assignment Techniques- All- Or- Nothing, Multiple Route, Capacity Restraint, Diversion Curves.</p>					
<p>Transportation & Parking Norms: Parking in transport system, parking surveys, parking norms & standards and new approaches to parking systems. Design of transport Infrastructure. Recent innovations in technologies and its probable impacts on future urban Forms-Government transport policies and evaluation of transportation proposals</p>					
<p>Weightage: Continuous Internal Assessment: 40%, End Semester Examinations: 60%</p>					
<p>Assessment Methodology: Two Assessments with equal weightage. One Assessment as Internal written Test /Examination (50%), second as Assignment (50%) of any mode such as study, seminar, and or a combination of modes, etc.</p>					
<p>References:</p> <ol style="list-style-type: none"> Kadiyali, L., R. Traffic Engineering and Transport Planning. New Delhi: Khanna Publishers, 1987. Dimitriou, Harry, T. A Developmental Approach to Urban Transport Planning. New York: Routledge, 1995. Bruton, Michael, J. Introduction to Transportation Planning. New York: Routledge, 1992. Black, John. Urban Transport Planning. Baltimore: John Hopkins University Press, 1981. B.G.Hutchinson -Principles of Urban Transport Systems Planning. New York: McGraw-Hill Inc.,1981 					

E resources

1. <https://www.itdp.org/>
2. <https://nptel.ac.in/courses/105106064> (NPTEL: Urban Transportation Systems)
3. <https://www.codatu.org/en/>
4. <https://www.transportpolicy.net/>

UR25008	Disaster Prevention and Mitigation In Cities	L	T	P/S	C
		3	0	0	3
<p>Objectives</p> <ul style="list-style-type: none"> To understand the importance of Disaster Risk Mitigation and Reduction. To understand the policies and role of various agencies in disaster mitigation. To understand the importance of community participation in DRR. Understanding the need for risk assessment, vulnerability analysis and mitigation 					
<p>Introduction: Introduction to Natural and man-made disasters. Conceptual approach to disaster management. Hazard & Vulnerability identification in Urban Context. Urban disaster risks, perspectives and approaches. Forecasting of disaster in urban context. Vulnerability Mapping and Assessment.</p>					
<p>Urban Risk Impact: Issues & Concerns: Urban disaster impact and role of urban planning in risk mitigation. Environmental impact of urban risks. Urban Transport as a factor in disaster risk reduction. Health issues due to urban disasters. Climate Change emergencies, pandemics and their impact.</p>					
<p>Action Plan And Strategies: Introduction to urban development policies and governance in urban disaster mitigation. Techno- legal frame work for urban risk Reduction. Mitigation framework & measures for both structural and non-structural safety: Earthquakes, Urban Flooding, coastal degradation and Urban Fires. Introduction to National Building code for risk management in buildings.</p>					
<p>Capacity Building on Disaster Risk Management: Risk identification, assessment and vulnerability analysis and mitigation strategies of urban areas. National and international case studies.</p>					
<p>Framework For Building Resilient Cities: Introduction to policies and frameworks for urban risk management. Community participation in risk management. Use of technology in disaster mitigation and management. Role of various agencies like NDMA, NIUA, and SIUD etc.</p>					
<p>Weightage: Continuous Internal Assessment: 40%, End Semester Examinations: 60%</p>					
<p>Assessment Methodology: Two Assessments with equal weightage. One Assessment as Internal written Test /Examination (50%), second as Assignment (50%) of any mode such as study, seminar, and or a combination of modes, etc.</p>					
<p>References:</p> <ol style="list-style-type: none"> National research council. Mitigating Shore Erosion Along Sheltered Coasts, Washington, DC: National Academies Press, 2007 Sener, S.M., C.A. Brebbia& O. Ozcevik. Disaster Management & Human Health Risk IV, 2015. Osti, Rabindra, and K. Miyake. Forms of Community Participation in Disaster Risk Management Practices. New York: Nova Science Publishers, 2011. Singh, Jagbir. Biodiversity Environment & Sustainability, New Delhi: M D Publications Pvt. Ltd, 2008 					

E resources

1. <https://ndma.gov.in/>
2. <https://www.undrr.org/>
3. <https://niua.in/>
4. <https://reliefweb.int/>

Course 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.

Introduction

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

Tools/ Techniques to Teach Architecture

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.

Synectics as a Model of Teaching.

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.

Student Development

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.

Learning In Architecture Design Studio

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.

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.

Weightage: Continuous Internal Assessment: 40%, End Semester Examinations: 60%.

Assessment Methodology: Two Assessments with equal weightage.

One Assessment as Internal written Test /Examination (50%), second as Assignment (50%) of any mode such as study, seminar, and or a combination of modes, etc.

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.