

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI													
Scheme of Teaching and Examinations – 2020													
M.Arch (HABITAT DESIGN)													
Choice Based Credit System (CBCS) and Outcome Based Education(OBE)													
I Semester													
Sl. No	Course	Course Code	Course Title	Teaching Hours Per Week					Scheme of Examination				Credits
				Theory (Lecture)	Studio (Practical)	Skill Development Activities (Workshop)	Total	Duration in hours	CIE (%)	SEE (%)		Total (%)	
										L	P		
1.	CORE COURSE	20HDC11	Habitat Design Studio - I	4	10	2	16	Minimum 20 mins per student	40	-	60	100	10
2.	CORE COURSE	20HDC12	Human Habitat: Studies and Design Thought	3	-	-	03	03	40	60	-	100	3
3.	CORE COURSE	20HDC13	Planning Theory and techniques	3	-	-	03	03	40	60	-	100	3
4.	SUPPORT COURSE	20HDS14	Advanced Theory of Design	3	-	-	03	03	40	60	-	100	3
5.	SUPPORT COURSE	20HDS15	GIS	1	-	2	03	-	100	-	-	100	2
6.	CORE ELECTIVE	20HDE16A	Sociology, Culture and Human Habitat	1	-	2	03	-	100	-	-	100	2
7.	PROFESSIONAL ELECTIVE	20HDE16B	Heritage Habitat: Conservation and Renewal	1	-	2	03	-	100	-	-	100	2
8.	PROFESSIONAL ELECTIVE	20HDE16C	Representation Techniques	1	-	2	03	-	100	-	-	100	--
TOTAL				16	10	08	34	-	-	-	-	700	25
HDC: Habitat Design Core Course				HDS: Habitat Design Support Course				HDE: Habitat Design Elective Course					
Note:													
1. Lecture (Theory) Hour - 1 Credit. 2 Studio (Practical) Hours - 1 Credit. 2 Workshop (SDA) Hours - 1 Credit.													
2. 2Minimum Marks for passing: Progressive Marks 50%, Theory Marks - 40% and Viva Marks - 50%.													
3. 20HDC11 - Small Community level study of existing Habitats.													
4. Two Electives 20HDE16A and 20HDE16B are Mandatory.													
5. 20HDE16C will be additional Non Credit Mandatory Course (NCMC) course, course will not carry any credits however it is acknowledged with attendance and title is reflected in the marks cards with NC (non credits) course													

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Scheme of Teaching and Examinations – 2020														
M.Arch (HABITAT DESIGN)														
Choice Based Credit System (CBCS) and Outcome Based Education(OBE)														
II Semester														
Sl. No	Course	Course Code	Course Title	Teaching Hours Per Week				Scheme of Examination				Credits		
				Theory (Lecture)		Studio (Practical)	Skill Development Activities (Workshop)	Total	Duration in hours	CIE (%)	SEE (%)		Total (%)	
				L	P						THEORY			VIVA
1.	CORE COURSE	20HDC21	Habitat Design Studio – II	4	10	2	16	Minimum 20 mins per student	40	-	60	100	10	
2.	CORE COURSE	20HDC22	Land Use Structure and Urban Morphology	3	-	-	03	03	40	60	-	100	3	
3.	CORE COURSE	20HDC23	Urban transportation and networks: Spatial Structure of Habitat System	3	-	-	03	03	40	60	-	100	3	
4.	SUPPORT COURSE	20HDS24	Research Methods and IPR	3	-	-	03	03	40	60	-	100	3	
5.	SUPPORT COURSE	20HDS25	Infrastructure Planning and Management	1	-	2	03	-	100	-	-	100	2	
6.	CORE ELCTIVE	20HDE26A	Urban Economics	1	-	2	03	-	100	-	-	100	2	
7.	PROFESSIONAL ELECTIVE	20HDE26B	Urban Lens and Captures	1	-	2	03	-	100	-	-	100	2	
8.	PROFESSIONAL MULTI DISCIPLINARY ELECTIVE	20HDE26C	Humane Habitat and Revitalizing Core Area	1	-	2	03	-	100	-	-	100	--	
TOTAL				15	10	10	34	-	-	-	-	700	25	
HDC: Habitat Design Core Course				HDS: Habitat Design Support Course				HDE: Habitat Design Elective Course						
Note:														
1. Lecture Hour - 1 Credit. 2 Studio Hours - 1 Credit. 2 Workshop Hours - 1 Credit.														
2. Minimum Marks for passing: Progressive Marks 50%, Theory Marks - 40% and Viva Marks - 50%.														
3. Two Electives are Mandatory (20HDE26A and 20HDE26B)														
4. 20HDC21 - Inner city regeneration and intervention														
5. 20HDE26C will be Non credit Mandatory Course (NCMC) , course will not carry any credits however it is acknowledged with attendance and title is reflected in the marks Card with NC (non credits) course														

4. 20HDC31 - New Extensions to Existing City
5. 20HDE37C is non credit mandatory course (NCMC) .All NCMC Courses will not have credits however it is acknowledged with attendance and title is reflected in the marks with NC (non credits) course
6. All the students have to undergo mandatory internship of 8 weeks during the vacation between II and III semesters. A University examination shall be conducted during III semester and the prescribed internship credit shall be counted for the same semester. Internship shall be considered as a head of passing and shall be considered for the award of degree. The students are required to submit periodic progress reports of the internship undertaken.

HABITAT DESIGN STUDIO-I (A SMALL COMMUNITY LEVEL STUDY OF EXISTING HABITATS)			
Course code	20HDC11	CIE %	40
Teaching Hours/week(L:P:SDA)	(4:10:2)16	Viva marks%	60
		Total Marks	100
Credits	10	Exam Hours	-
Course objectives:			
The Habitat Design Studio aims at studying and understanding the fabric of an existing habitat and realize the determinants and causative forces responsible for urban growth and change.			
Studio Outline:			
<p>To comprehend the dynamics of an existing habitat at community level.</p> <p>1. Study and documentation of identified study area.</p> <ul style="list-style-type: none"> Geographic parameters- site environment, topography, climate, natural and manmade features. Social environment- Society, Community, Groups. Social Structure & Institutions- continuity and change. Demographic analysis, Economic profile of the population. Spatial Morphology- Land use, Transport networks, Building typology. Physical & Social Infrastructure. Land value, Tenure Pattern. Institutional Framework. <p>2. Data Analysis and Inferences</p> <ul style="list-style-type: none"> The syntax of space. Infrastructure service levels. Tangible, Intangible aspects of the habitat. Aspects of Temporality and Informality. Aspects of Human networks, Associational Values, Social segregation, Overcrowding, Contested Spaces, Crime and Gender issues. Imageability. <p>3. Interventions</p> <ul style="list-style-type: none"> Strategies to be proposed for the study area in response to the inferences drawn. Any one of the suggested strategies to be demonstrated through design. <p>Any other salient features relevant to the identified study area to be considered.</p> <p>Documentation and Analysis may be carried out in groups. Students to propose interventions individually.</p>			
Course outcome:			
<p>Students are equipped with the following:</p> <ol style="list-style-type: none"> Methods to collect and analyze data related to an urban fabric. Comprehend contemporary design issues of a habitat. Generate strategies and propose suggestive/design interventions for the existing urban habitat. 			
Reference Books			
<ol style="list-style-type: none"> Cliff Moughtin, "Urban Design: Street and Square", Architectural Press, 2003. Gehl, J, "Life Between Buildings: Using Public Space", Washington, D.C. Island Press, 2011. Michael Larice (Editor), Elizabeth Macdonald (Editor), "The Urban Design Reader" Routledge, 2013. Kevin Lynch, "The Image of the City", MIT Press, 1960. Peter Hall, "Cities Of Tomorrow: An Intellectual History of Urban Planning and Design in the Twentieth Century", Blackwell Publishers, 1988. 			

HUMAN HABITAT: STUDIES AND DESIGN THOUGHT			
Course code	20HDC12	CIE marks%	40
Teaching Hours/week(L:P:SDA)	(3:0:0)3	SEE marks%	60
		Total Marks	100
Credits	03	Exam Hours	03
Course objectives:			
To introduce the students to concepts and components of human habitat, its determinants and methods of study.			
MODULE 1			
HUMAN HABITAT AND ITS DETERMINANTS Components of Human Habitat. Socio economic, Cultural and Historic determinants of urban growth and urban form. Idea as determinant –City as Patterns, Diagrams and Spaces. Evolution of cities and towns in India.			
MODULE 2			
READING THE CITY Urban design vocabulary. Urban grid, Grain, texture, scale and socio spatial schema. Dimensions of reading the urban form. Concept of Urban space, Place and Public realm. Social Structure, Cognition, Experience and Urban form.			
MODULE 3			
APPROACHES TO STUDY HUMAN HABITAT Methods of Urban design surveys – Inventories and Techniques. Visual survey, site studies and other tools to understand urban environment. Qualitative and quantitative methods of analysis.			
MODULE 4			
CONCEPTS AND THEORIES OF URBAN FORM Imageability, Perception, townscape and elements of urban design (Gordon Cullen, Kevin Lynch). Utopian concepts. Historical examples of Urban Design Projects. Rise of Advocacy Planning, changing role of NGOs and Urban Social Movement in India.			
MODULE 5			
HABITAT DESIGN STUDIES Habitat Design, Urban Design and their relation with planning and architecture. Role of Habitat Designer. Views of Design of Habitat as extension of architecture (mega architecture) and as architectural expression of planning. Habitat Design at micro level: City Centers, Transportation Corridors, Residential Neighborhoods and Water Fronts.			
Course outcome:			
Students are able to comprehend determinants and evolution of human habitats and are acquainted with contemporary dimensions of habitat design and planning.			
Reference Books:			
1. Kevin Lynch, “Imageability of City”, The MIT Press, 1960. 2. Camillo Sitte, “City Planning according to Artistic principles”, Phaidon Press, 6th Edition, 1965. 3. Kevin Lynch, “Good City Form”, The MIT Press, Reprint Edition, 1984. 4. Rob Krier, “Urban street and Squares”, Architectural Press, 3rd Edition, 2003. 5. Gordon Cullen, “Townscapes”, Architectural Press, 1st Edition, 1961. 6. Donald Watson, “Time-Savers Standards for Urban Design”, McGraw Hill Education, 2017.			

PLANNING THEORY AND TECHNIQUES			
Course code	20HDC13	CIE marks%	40
Teaching Hours/week(L:P:SDA)	(3:0:0)3	SEE marks%	60
		Total Marks	100
Credits	03	Exam Hours	03
Course objectives:			
To introduce the basic concepts of Urban Planning in terms of tools, methods and their application.			
MODULE 1			
INTRODUCTION TO PLANNING Planning terms and definitions. Basic principles of settlement planning. Components of settlement structure. Theories of Urban structure and Urban Sub-systems.			
MODULE 2			
PHYSICAL PLANNING Aims and Objectives of Physical Planning, Levels of Planning in India, Models of the Planning Process. Concepts of Urban Land use, Systems affecting land uses and rationale for land use planning. Locational attributes of urban land uses.			
MODULE 3			
DEVELOPMENT PLANS AND LEGAL FRAMEWORK Urban Development Plans: Types, scope, purpose and content. Approaches to preparation of Interim and Comprehensive Plans: Structure Plan, Master Plan, Zonal Development Plan and Strategic Planning. Legal frame work, Regulations, Byelaws, Standards and Norms and their basis.			
MODULE 4			
TECHNIQUES FOR DATA COLLECTION AND ANALYSIS Techniques of understanding aspects of cities and towns: spatial structure, traffic and transportation, roads and networks, demography, socio-economic, environmental, institutional and finance. Methods of collecting various data through primary and secondary sources. Sources of various data in India. Familiarization of techniques- Field Surveys, Questionnaire Design,Sampling and digital mode of data collection. Data Analysis and presentation techniques.			
MODULE 5			
INTRODUCTION TO TOWN PLANNING ACT Town Planning Acts in different states of India; Study of different state Acts and its implications; Town Planning Schemes. Implementation techniques – Financial planning, schemes and programs, organizational structure. Provisions of the plan implementation through the Act.			
Course outcome:			
Students are equipped with tools and techniques of understanding the basic concepts of Urban Planning.			
Reference Books			
1. Arthur Gallion, “Urban Pattern”, John wiley& Sons; 5th Edition, 2003. 2. Siddhartha N.Mukherjee, “Cities -Urbanization and Urban System”, KitabMahal, 12th Edition, 2017. 3. Peter Hall, “Urban and Regional Planning”, Routledge, 5th edition, 2010. 4. K.P.Yadav, “Vol 1-5- Encyclopedia of Economic Planning and Development”, Ivy Publishing House. 5. AbirBandyopadhyay, “Text Book of Town Planning”, Books and Allied Ltd, 2000.			

ADVANCED THEORY OF DESIGN			
Course code	20HDS14	CIE marks%	40
Teaching Hours/week(L:P:SDA)	(3:0:0)3	SEE marks%	60
		Total Marks	100
Credits	03	Exam Hours	03
Course objectives:			
To gain exposure and understand the advances in Design theories and its impact on cities.			
MODULE 1			
COGNITION AND HABITAT Environmental perception, cognition, cognitive and mental maps. Image of towns and cities. Metaphors and iconic structures and their impacts.			
MODULE 2			
BEHAVIOURAL ASPECTS AND URBAN FORM Urban scale, urban spaces, urban massing. Quality of urban enclosure. Principles of urban spatial organization. Behavioral issues in urban spaces.			
MODULE 3			
DESIGN THEORIES AND URBAN MOVEMENTS Introduction to Urban Design movements and theories: Modernism, Post Modernism, structuralism and post structuralism, ideas of self-similarity and fractals, neo classism, revivalism etc. and its impact on habitat design theory. Theory of urban form.			
MODULE 4			
THEORY OF URBANISM Modernization & Urban Development: International Perspectives. New Urbanism – Introduction, tools and strategies. Post-Modern Urbanism: Contextualism. Everyday Urbanism. Post-Industrial Landscapes: Rust belts, Free Trade Zones, Sprawl.			
MODULE 5			
LAYERING IN A HABITAT Organic habitats and designed habitats. Historic core and contemporary urbanism. Study of Ideas of historic layering of space and networks, Lattices v/s trees as urban structural metaphors.			
Course outcome:			
The students are equipped with knowledge about various design theories and their application in the design of cities.			
Reference Books			
1. Jon Lang, “Creating Architectural Theory”, John Wiley & Sons, 2nd edition, 1987. 2. Jon Lang, “Urban Design”, Architectural Press, 2nd edition, 2017. 3. Kate Nesbit, “Theorizing a New Agenda for Architecture”, 2nd edition, 1996. 4. Geoffrey Broadbent, Richard Bunt and Charles Jencks, “Signs, Symbols and Architecture”, John Wiley & Sons, 1st edition-1980. 5. Douglas Farr, “Sustainable Urbanism: Urban design with nature”, John Wiley & Sons, Inc., New Jersey, 2008.			

GIS			
Course code	20HDS15	CIE marks%	100
Teaching Hours/week(L:P:SDA)	(1:0:2)3	SEE marks%	-
		Total Marks	100
Credits	02	Exam Hours	-
Course objectives:			
To enable documentation, mapping, analysis and presentation using Geographic Information Systems for Habitat Design.			
MODULE 1			
INTRODUCTION TO GIS Geographic Information System. Spatial Data Types and examples. Turning Geographic Information into GIS data. Geospatial data formats and suitability.			
MODULE 2			
WORKING WITH GIS- RASTERS AND VECTORS Creating spatial data layers. Raster – Geo-referencing scanned paper maps. Analyze elevation and produce contour lines based on Digital Elevation Model data. Vector - Deriving geometric properties and basic statistics.			
MODULE 3			
WORKING WITH GIS- CREATING MAPS Create a base map by categorizing, styling and labeling spatial data layers. Tracing on Satellite imagery and geo-referenced maps. Derive water streams and determine orders based on DEM data.			
MODULE 4			
GEOGRAPHIC DATA SOURCES GIS data - Freely available data sources. Introduction to Open Street Maps and other relevant data sources.			
MODULE 5			
VISUALISATION AND MODELLING Compose and produce a printable map in GIS. Introduction to Map box tools. Create an interactive web map that is accessible for a larger audience. Practical urban design exercises.			
Course outcome:			
The student will gain knowledge on GIS and various characteristics of Dataand its applications in Habitat design, planning and settlement studies.			
Reference Books			
1. AnupamaPai, “An Introduction to Maps”, Foundation for Ecological Research, Advocacy and Learning, 2004. 2. Peter A. Burrough, Rachael A. McDonnell, and Christopher D. Lloyd, “Principles of Geographical Information Systems”, Oxford University Press, 2015 3. FrederikRamm, JochenTopf, Steve Chilton, “OpenStreetMap: Using and Enhancing the Free Map of the World”, UIT Cambridge, 2010. 4. Robert Laurini, “Information Systems for Urban Planning : A Hypermedia Cooperative Approach”, Taylor & Francis Ltd, 2001. 5. Michael Zeiler, “Modeling our world: The ESRI Guide to Geodatabase Concepts”, ESRI Press, 2010. 6. C.J.Date, ” An Introduction to Data base Systems”, Addison-Wesley Publishing Company, 1995 7. RamezElmasri, Shamkant B. Navathe, “Fundamentals of Data base Management System”, Pearson, 2016.			

8. Environmental Systems Research Institute," Understanding GIS, The Arc Info Methods", ESRI Press 1992.

SOCIOLOGY, CULTURE AND HUMAN HABITAT			
Course code	20HDE16A	CIE marks%	100
Teaching Hours/week(L:P:SDA)	(1:0:2)3	SEE marks%	-
		Total Marks	100
Credits	02	Exam Hours	-
Course objectives:			
To familiarize students with the social aspects and its implications on Human Habitat.			
MODULE 1			
INTRODUCTION Introduction to Urban Sociology. Theories of Urban Sociology- Emile Durkheim, Georg Simmel, Max Weber.			
MODULE 2			
SOCIAL ELEMENTS OF A HABITAT Society, Community, Caste, Kinship, Family, Culture, Religion. The Urban Social Order, Social Stratification, Social Relationships and Networks.			
MODULE 3			
DEMOGRAPHIC CHARACTERISTICS Demographic Transition and its influence on the physical environment. Characteristics of communities- Homogeneity & Heterogeneity, Ethnic enclaves, Social cohesion, Social segregation. Symbiotic relations of communities.			
MODULE 4			
SOCIAL INSTITUTIONS & MIGRATION Evolution and significance of Social Institutions in contemporary urban environment. Analysis through examples. Migration Patterns- Social Disorganization, alienation, Concerns of Privacy and Identity.			
MODULE 5			
URBAN SOCIAL PROCESSES Social implications of Gentrification, Neo-liberalization, Globalization. Other Issues- Crime, Gendered Urban Spaces, Contested Spaces. Demonstration of social processes and conditions through illustrations.			
Course outcome:			
Students will be able to comprehend the implication of the social aspects of the human habitat in influencing the spatial structure.			
Reference Books			
1. Jan and Mele, "The Urban Sociology Reader", Routledge, 2012. 2. William Flanagan, "Contemporary Urban Sociology", Cambridge University Press, 1993. 3. Henri Lefebvre, EleonoreKofman (Editor), Elizabeth Lebas (Editor), "Writings on Cities", Wiley, 1996. 4. Mark Gottdiener, Ray Hutchison, "The New Urban Sociology", Westview Press, 2010. 5. Neil Brenner, Peter Marcuse, Margit Mayer, "Cities for People, Not for Profit: Critical Urban Theory and the Right to the City", Routledge, 2011.			

HERITAGE HABITA: CONSERVATION AND RENEWAL			
Course code	20HDE16B	CIE marks%	100
Teaching Hours/week(L:P:SDA)	(1:0:2)3	SEE marks%	-
		Total Marks	100
Credits	02	Exam Hours	-
Course objectives:			
To equip students to deal with conservation and recycling along with related design issues of existing urban environment, old cities, natural and urban heritage areas.			
MODULE 1			
INTRODUCTION TO THE PRINCIPLES AND PHILOSOPHY OF CONSERVATION Concepts of History, Heritage and means of recording them. History heritage and cities, traditional water systems. Introduction to conservation, Historic and Inner City Areas and other Natural elements.			
MODULE 2			
CONSERVATION-DIFFERENT PERSPECTIVES Concepts and approaches to conservation in India and other countries. Socio-economic development, tourism infrastructure development and role of urban conservation. Historic overview of recycling cities. Conservation Area practice, adaptive reuse, upgradation programs in old areas, infill design.			
MODULE 3			
POLICIES, LAWS AND CHARTERS Institutional Aspects of Conservation - Charters - World Heritage legislation and Sites Conservation Acts. Legislation Archaeological Acts Institutional framework for conservation in India and other countries. Legislation frameworks and institutional framework for special areas, urban conservation, and urban recycling.			
MODULE 4			
HERITAGE ECONOMICS/ IMPLEMENTATION FRAMEWORK Financial and Implementation framework for urban conservation and Adaptive Reuse Projects. Conservation management, community participation, economic regeneration, upgrading infrastructure, financing and implementation framework for redevelopment and revitalization projects.			
MODULE 5			
CURRENT CONSERVATION PRACTICES Risk & Threat Preparedness-Heritage in the times of Conflicts and disasters. Urban recycling and brown field projects, urban renewal and development strategies for regeneration of inner city areas. Best practices in Urban Conservation, Regeneration and Adaptive Re-use in India and other countries through case studies.			
Course outcome:			
Students are equipped with an understanding of the concepts of Heritage and are exposed to tools and frameworks of heritage conservation and renewal in urban habitats.			
Reference Books			
1. Alan Dobby, "Conservation and Planning", Hutchinson, 1978. 2. Abdul WasayNajimi, "Herat – The Islamic City (A study in Urban Conservation)", Sanctum Books, 1987. 3. Bernard Feildan, "Conservation of Historic Buildings", Architectural Press, 3rd edition, 1982. 4. Erica Av rami, Randall Mason, Marta de la Torre, "Values and Heritage Conservation", The J.			

Paul Getty Trusts, 2000.

5. Jeff Cody, Francesco Siravo, "Historic Cities: Issues in Urban Conservation. Volume 8 of Readings in conservation", Getty Publications, 2019.
6. Francesco Bandarin, Ron van Oers, "The Historic Urban Landscape: Managing Heritage in an Urban Century", John Wiley & Sons, 2012.
7. Nathaniel Lichfield, "Economics in Urban Conservation", Cambridge University Press, 1988
8. Alexander Stille, "The Future of the Past", Picador, 2003.

REPRESENTATION TECHNIQUES			
Course code	20HDE16C	CIE marks%	100
Teaching Hours/week(L:P:SDA)	(1:0:2)3	SEE marks%	-
		Total Marks	100
Credits	02	Exam Hours	-
Course objectives:			
To learn the techniques to communicate data effectively by intersecting a wide range of graphical tools.			
MODULE 1			
INTRODUCTION TO REPRESENTATION TECHNIQUES Tools such as graphs, illustrations, diagrams, charts, flowcharts, maps, schematic drawings, images as part of expressional representations. Case Studies-Achieving Communicative efficiency through appropriate tools. Representation modes and their capacity to alter or subvert readings.			
MODULE 2			
CREATIVE TECHNIQUES FOR DESIGN AND ILLUSTRATION Graphical Entries and Symbolism. Visual Journaling: Illustrating the talks. Expressing ideas in editorial illustrations. Travel Maps and Cognitive mapping.			
MODULE 3			
MAPPING TECHNIQUES Digital Mapping-Different techniques and utility of tools. Participatory Mapping. Mapping tangible and intangible components of habitats.			
MODULE 4			
DATA ANALYSIS AND OPTIMISATION Observing techniques and tools. Speculating methods and techniques through case studies (simulating actions and changes, for presenting visions of the future and for engaging multiple actors in the process of envisioning change and guiding action).			
MODULE 5			
REPRESENTATION OF OUTCOME Design demonstration and Representation of current and future scenarios. Post design analysis. Modeling and simulations.			
Course outcome:			
Students are equipped with the skills of careful observation, collection, assimilation and representation of data and tools for design demonstration.			
Reference Books			
1. Tufte, Edward R, "Envisioning Information", Graphic Press, 1990. 2. Tufte, Edward R, "Visual Explanations", Graphic Press, 1997. 3. Tufte, Edward R, "The Visual Display of Quantitative Information", Graphic Press, 2001. 4. Spirn, Anne Whiston, "The Language of Landscape", Yale University Press Publishing, 1998. 5. Jacobs, Allan B, "Starting to Look" in Looking at Cities, Harvard University Press, 1985. 6. Jacobs, Allan B, "Great Streets", MIT Press, 1993. 7. Krier, Leon, "Urban Components", 1979.			

8. Krier, Leon, "Drawing for Architecture", MIT Press, 2009.
9. Morris, Errol, "Believing Is Seeing: Observations on the Mysteries of Photography", Penguin Books, 2014.

HABITAT DESIGN STUDIO-II (INNER CITY REGENERATION AND INTERVENTION)			
Course code	20HDC21	CIE marks%	40
Teaching Hours/week(L:P:SDA)	(4:10:2)16	Viva marks%	60
		Total Marks	100
Credits	10	Exam Hours	-
Course objectives:			
Studio aims to sensitize students to the complexities within an urban core/inner city and comprehend the nature of intervention.			
Project:			
<p>To examine and intervene in a delineated area of inner city.</p> <ul style="list-style-type: none"> • Documenting the existing urban fabric with emphasis on the Infrastructure provision, Environmental processes, Socio-economic aspects, political environment. • Importance of Urban conservation with respect to historic context of site. • Traffic management and Mobility plans. • Significance of user group engagement and methods of stakeholder participation in program development and project formulation. • Develop appropriate strategies to address objectives of inner-city regeneration/redevelopment. • Implementation framework to form integral part of the project structuring. • Diagnose implications of suggested interventions on the larger urban fabric, to re-examine values in terms of social, physical and progressive nature of change. <p>Documentation and Analysis may be carried out in groups and interventions to be submitted individually.</p>			
Course outcome:			
Students are equipped with skills to diagnose the inner city and develop participatory approaches for intervention. Students gain holistic understanding of the projects by assessing implication of the proposed strategies.			
Reference Books			
<p>1. Geoffrey Broadbent, “Emerging concepts in urban space design”, Taylor & Francis, 1st Edition, 1995.</p> <p>2. Dew, Berry and Davis, “Land Development Handbook, Planning Engineering and Surveying”, McGraw-Hill, 3rd Edition 1998.</p> <p>3. Cliff Moughtin, “Urban Design – Green Dimensions”, Architectural Press, 2nd Edition 1996.</p> <p>4. Robert K. Home, “Inner City Regeneration”, University Press, Cambridge, 1982.</p> <p>5. David Donnison (Editor), Alan Middleton (Editor), “Regenerating the Inner City: Glasgow’s Experience”, Routledge Library Editions: Urban Planning Book 10, 1987.</p> <p>6. KanadPankaj, “Renewal for Smart Cities: A Study on Inner-City Area of Bhopal, India”, LAP LAMBERT Academic Publishing, 2018.</p>			

LAND USE STRUCTURE AND URBAN MORPHOLOGY			
Course code	20HDC22	CIE marks%	40
Teaching Hours/week(L:P:SDA)	(3:0:0)03	SEE marks%	60
		Total Marks	100
Credits	03	Exam Hours	03
Course objectives:			
To understand urban morphology through perception, cognition and Spatial aspects of a city structure.			
MODULE 1			
INTERPRETING THE URBAN GEOGRAPHY Introduction to urban geography – Triggers and Outcomes of urbanization. Study of patterns of distribution and interaction within cities, from quantitative, qualitative, structural, and behavioral perspectives. Understanding Urban Geography through: Cognition, perception and spatial representation. Cognitive mapping- Contemporary and traditional methods.			
MODULE 2			
MORPHOLOGY OF HABITAT STRUCTURES Renaissance and the Re-configuration of space. Industrial revolution, Technologies and the 19th century transformation of world views. Compression of time-space and the birth of Suburbia, Idealized Space, Romanticism and the Garden City Movement. Ideal-Space diagram and city form.			
MODULE 3			
MAPPING SACRED GEOGRAPHY Astronomy and city structure. Vastu Shastra and the integrated world view. Sacred Geographies, Sacred Cities, Precincts and Spaces. Sacred Rivers, Ghats, Mounds, Trees and other Totems in Urban Space. Mapping the Sacred.			
MODULE 4			
RHYTHMS OF THE CITY Modern work rituals and the definition of fragmented zones, time space and lives. Nightlife and electronic definition of time. Significance, Signs and meaning of structure. Imagined places, collage of time space representations in Literature, Cinema and the Performing Arts.			
MODULE 5			
URBAN GROWTH AND SYSTEM OF CITIES Growth of metropolitan and mega cities: scale, complexity. Metropolitan growth– Trends, characteristics, challenges, socio-economic and political issues in India and other Asian Geographies.			
Course outcome:			
Students are familiarized with factors that shape Urban Morphology and gain understanding of perceptive and cognitive elements of City Structure.			
Reference Books			
1. Spiro Kostoff, “City shaped”, Bulfinch, Reprint Edition, 1993. 2. Sumita Ghosh, “Introduction to settlement geography”, Orient BlackSwan, 1998. 3. Michael Pacione, “Urban Geography: A Global perspective”, Routledge; 1st Edition, 2009. 4. Paul L Knox, “Urbanization”, Pearson, 2012. 5. Diana L. Eck, “India: A Sacred Geography”, Three Rivers Press, 2013			

URBAN TRANSPORTATION AND NETWORKS: SPATIAL STRUCTURE OF HABITAT SYSTEM			
Course code	20HDC23	CIE marks%	40
Teaching Hours/week(L:P:SDA)	(3:0:0)3	SEE marks%	60
		Total Marks	100
Credits	03	Exam Hours	03
Course objectives:			
To introduce the fundamentals of urban transport planning and its significance as an organizing factor of spatial structure of habitat systems.			
MODULE 1			
TRANSPORT PLANNING- DEFINITIONS AND CONCEPTS Scope of urban transport planning, land use-transport integration, stages involved in transport planning. Urban Transportation systems and its classification; different modes of transport and its technological characteristics; the nature of demand and supply of transport services and integrated planning. Mobility concepts and accessibility.			
MODULE 2			
MODES OF COMMUTE AND TRAFFIC SURVEYS Introduction to pedestrian, motorized and non-motorized vehicles. Urban Transportation surveys: Definition of study area, zoning, types of surveys- origin and destination survey, classified traffic volume counts, pedestrian survey and parking survey. Forecasting traffic in relation to planned land use.			
MODULE 3			
4-STAGE MODELLING Trip Generation- Introduction, Definitions, Trip Purposes-Factors associated with Trip generation and Attraction, Method of analysis. Trip Distribution- Introduction, Methods, Growth factor, Uniform growth factor, Average Growth factor, Fratar Methods and synthetic analysis, Gravity Model. Trip Assignment –Definition, Applications, Resistance to travel, Minimum travel path tree- Assignment Techniques, All Or Nothing, Multiple Route. Modal Split: Introduction, Factors affecting, Modal Split in the Transportation Planning Process, types of modal split.			
MODULE 4			
TRAFFIC AND PARKING MANAGEMENT Introduction to traffic management and calming techniques. Mobility plans - introduction and process - CTTS (Comprehensive Traffic and Transportation Studies), CMP (Comprehensive Mobility Plan) and LCMP (Low Carbon Mobility Plan). Parking management: norms and standards, new approaches. Parameters of understating the design of Transport infrastructure- universal accessibility, road and intersection improvement & design.			
MODULE 5			
INNOVATIONS IN URBAN TRANSPORTATION AND POLICIES Concepts of TOD. Innovations in urban transportation and its impact. Government national transport policies and its impact and evaluation. Policies- NUTP (<i>National Urban Transport Policy</i>), National TOD Policy and Metro Policy 2017.			

Course outcome:

Students are equipped with the fundamentals of urban transport planning, transport modeling, policies and its implications on the spatial structure of habitats.

Text Books

1. Khanna and Justo, "Highway Engineering", Nem Chand & Bros, 10th edition, 2015.
2. Kadiyali L R., "Traffic Engineering and Transportation Planning", Khanna Publishers, 3rd Edition, 1987.

Reference Books

1. Dimitriou H.T, "Urban Transport Planning and Developmental Approach", Routledge, 1st Edition, 2012.
2. Michael J Bruton, "An Introduction to Transportation Planning", Hutchinson, 2nd Edition, 1970.
3. John Black, "Urban Transport Planning and Design", the Johns Hopkins University Press, 1981.
4. Vukan R. Vuchic, "Urban Transit: Operations, Planning, and Economics", Wiley, 1st Edition, 2005.
5. Vukan R. Vuchic, "Urban Transit Systems and Technology", Wiley, 1st Edition, 2007.

RESEARCH METHODS AND IPR			
Course code	20HDS24	CIE marks%	40
Teaching Hours/week (L:P:SDA)	(3:0:0)3	SEE marks%	60
		Total Marks	100
Credits	03	Exam Hours	03
Course objectives:			
The objective is to introduce the meaning, concepts and methods of Research towards a structured, systematic and logical inquiry in projects; to enable technical writing skill, publication ethics and IPR.			
MODULE 1			
INTRODUCTION TO RESEARCH, RESEARCH METHODOLOGY AND RESEARCH METHODS Objectives & Significance of Research. Subjectivity v/s Objectivity. Methods of knowing, Differences between Science & Common-sense. Scientific Research & steps involved. Classification & types of Research- applied, theoretical, empirical, normative, interpretative and observational. Ex Post Facto research. DEFINING THE RESEARCH PROBLEM Formulation of Aims & Objectives of Research. Concepts, Constructs and Variables. Problem statement. Scope of Research. Literature review as a secondary data to enable subsequent evolution of a theoretical framework. Relevance of research in Habitat design & Architecture; its role in the formulation of built environment.			
MODULE 2			
HYPOTHESIS Meaning, Importance, Construction & Types of Hypotheses. TESTING OF HYPOTHESIS Basic Concepts concerning Testing of Hypotheses, Test Statistics and Critical Region, Critical Value and Decision Rule. Procedure involved in Testing, P-Value approach. Power of Test, Limitations of the Tests, Chi-Square Test. RESEARCH DESIGN Meaning, Need, Importance, Principles, Characteristics of good research design, Concepts and Types of Research Designs. Cross-sectional research and Longitudinal research (Trend, Cohort, Panel studies), Ex-post factor research.			
MODULE 3			
SAMPLING DESIGN Introduction, Purpose, Applications and Advantages. Types of Sampling Designs, Probability and Non-Probability Sampling design, Sampling v/s Non-Sampling error, Sample Survey v/s Census Survey, Determination of sample size for estimating the population proportion. MEASUREMENT & SCALING Qualitative and Quantitative Data, Types of Measurement Scales, Attitude, Single item v/s Multiple Item scale, Comparative v/s Non-Comparative scales, Measurement Errors, Scaling techniques, Calculation of Mean, Median, Mode.			
MODULE 4			
TECHNIQUES OF DATA COLLECTION Secondary and Primary Data collection, Techniques relevant to Habitat design projects. Pilot Surveys. Introduction to Meaning, Types, Advantages and Limitations of Primary data collection by Socio-economic research techniques such as:			

- a) Surveys
- b) Questionnaires
- c) Interview Schedules
- d) Observations/ Experiments
- e) Case Studies
- f) Focused group discussions

STATISTICAL ANALYSIS OF DATA

Data processing and Analysis, Tabulation and Tools of Representations.

MODULE 5

WRITING RESEARCH PAPER OR REPORT

Significance of Publishing, Steps in Writing, Structure, Content, Flow of chapters or Headings, Text and Images, Referencing, Precautions and Plagiarism norms, Good publication guidelines. Impact factor.

RESEARCH ETHICS

Meaning of Ethical conduct by Researcher and implications, Ethical Codes, Responsibility of Ethics in Research & Publishing.

INTELLECTUAL PROPERTY RIGHTS

The Concept of Intellectual Property & Patents, Intellectual Property System in India, development of TRIPS Complied Regime in India, Various Acts such as Patents Act 1970, Trade Mark Act 1999, The Designs Act 2000 etc. Competing Rationales for Protection of IPRs, Leading International Instruments Concerning IPR, Trade Related Aspects of Intellectual Property Rights (TRIPS) Agreement & salient features under the same, Enforcement of Intellectual Property Rights, UNSECO.

Relevant case studies/ literature studies.

Course outcome:

Students will become equipped with Scientific Research abilities, Various methods involved in the Research process, Data collection methods and Technical writing skills.

Text Books

1. Kothari & Garg, "Research Methodology: Methods and Techniques", New Age International Publishers, 2014.
2. Fred Kerlinger, "Foundations of Behavioural Research", Paperback. 2017
3. Ram Ahuja, 'Research Methods', Rawat Publications, 2002
4. Ranjit Kumar "Research Methodology: A step-by-step Guide for beginners", Pearson Education Ltd, 2005
5. R P Misra, "Research Methodology: A Handbook (revised & enlarged)", Concept Publishing Company Pvt. Limited, 2016
6. Benjamin K. Mutai, "How to Write Quality Research Proposal A Complete and Simplified Recipe", Thelley Publications, 2000
7. Neeraj Pandey & Khushdeep Dharni, "Intellectual Property Rights", PHI Learning (edition 1), 2014
8. 'Study material - Professional Programme Intellectual Property Rights, Law and Practice', The Institute of Company Secretaries of India, Statutory Body Under an Act of Parliament, 2013

Reference Books

1. Linda N. Groat & David Wang, "Architectural Research Methods", Wiley, 2013
2. Raymond Lucas, "Research Methods for Architecture", Laurence King Publishing, 2016
3. Daniel D. Watch, "Research for the Global Good: Supporting a Better World for all", Images Publishing, Australia, 2010.

4. F. Abdul Rahim, "Thesis Writing: Manual for all Researchers", New Age International (p) Ltd., 1996
5. BijuDharmapalan, "Scientific Research Methodology Paperback", Narosa publishing house, 2013
6. Neil Appleton (Editor), "Research Building: Planning and Design Hardcover", Design media Publishing Ltd., 2013
7. Fink A, "Conducting Research Literature Reviews: From the Internet to Paper", Sage Publications, 2009.
8. Ronald F. Czaja, Johnny Blair, "Designing Surveys: A Guide to Decisions and Procedures", SAGE Publications, Inc; Third edition, 2013.
9. (Editors) Parija, Subhash Chandra, Kate, Vikram (Eds.), "Writing and Publishing a Scientific Research Paper", Springer, 2017.

INFRASTRUCTURE PLANNING AND MANAGEMENT			
Course code	20HDS25	CIE marks%	100
Teaching Hours/week(L:P:SDA)	(1:0:2)3	SEE marks%	-
		Total Marks	100
Credits	02	Exam Hours	-
Course objectives:			
To develop an insight on holistic infrastructure planning and management.			
Course outline:			
MODULE 1			
CONCEPTS IN URBAN INFRASTRUCTURE Types and characteristics of infrastructure. Infrastructure provision and guiding principles. Overview of infrastructure in India; indicators and benchmarks. Policy Framework- National, State and Local level policies for social and physical infrastructure.			
MODULE 2			
PHYSICAL AND SOCIAL INFRASTRUCTURE URBAN PHYSICAL INFRASTRUCTURE- Qualitative and Quantitative techniques of assessing requirements with emphasis on Water Supply, Sewerage, Solid Waste and Storm Water. URBAN SOCIAL INFRASTRUCTURE- Qualitative and Quantitative techniques of assessing requirements, Planning Amenities and Institutions.			
MODULE 3			
ECONOMIC INFRASTRUCTURE AND ITS ROLE IN INFRASTRUCTURE DEVELOPMENT Economic infrastructure-Qualitative and Quantitative techniques of assessing requirements, Institutions in Economic Infrastructure. Role of lead and corporate banks, Self Help Groups, NGOs. Institutions and instruments of resource mobilization- Public and private sector role in resource mobilization and Urban infrastructure development related issues. Financing systems, sources of finance, leasing and contracting methods, pricing and financing, Major National and International agencies involved. Quality control mechanism.			
MODULE 4			
URBAN MANAGEMENT BODIES Introduction to urban management. Evolution and structure of urban management bodies. Role of Parastatals in Urban Management. Concepts of decentralization of development and management.			
MODULE 5			
GOALS AND SUSTAINABLE URBAN INFRASTRUCTURE DEVELOPMENT Managing Infrastructure development, corporatization and related goals, decentralized and people led infrastructure provisions, social goals and equity. Environmental and economic issues and assessments related to physical infrastructure. Sustainable Development Goals as per United Nations- Study of Infrastructure projects in the present scenario.			
Suggested seminar topics/ term papers			
1. Green and Brown Agenda in Infrastructure provision. 2. 74 th Amendment and implication on Urban Infrastructure and Management. 3. Policy Framework comparison. 4. Impact of technology in infrastructure planning and management. 5. Case studies from Asian cities of successful, innovative infrastructure provisions, equitable economic development, management and maintenance schemes.			

6. Study of infrastructure in rapidly growing cities and regions: Infrastructure monitoring, infrastructure indicators development, standards, benchmarks.
7. Technological advancements: Role of spatial information technology in monitoring and planning infrastructure.
8. Policy issues in infrastructure provision: policy development and influencing factors, key issues, role of regulatory authorities.

Course Outcome:

Students are equipped with the conceptual understanding of urban infrastructure development and management and are able to distinguish between the qualitative and quantitative aspects of its impact on urban built form.

Reference Books:

1. Eduardo Vasconcellos, "Urban Transport, Environment and Equity", Routledge; 1st Edition, February 2001.
2. B.G.Hutchinson, "Principles of Urban Transport Systems Planning", McGraw-Hill, 1974.
3. Hideo Nakamura, Kotaro Nagasawa, Kazuaki Hiraishi, Atsushi Hasegawa, KE Seetha Ram, ChulJu Kim, and Kai Xu, "Principles of Infrastructure: Case Studies and Best Practices", Asian Development Bank Institute and Mitsubishi Research Institute, 1st Edition, Inc, 2019.
4. RajarshiMajumder, "Infrastructure and Development in India: Interlinkages and Policy Issues", Rawat Publications, 1st Edition, 2008.
5. Alvin S. Goodman and MakarandHastak, "Infrastructure Planning Handbook: Planning, Engineering, and Economies", McGraw-Hill, 1st Edition, 2006.

URBAN ECONOMICS			
Course code	20HDE26A	CIE marks%	100
Teaching Hours/week(L:P:SDA)	(1:0:2)3	SEE marks%	-
		Total Marks	100
Credits	02	Exam Hours	-
Course objectives:			
To familiarize students with the fundamentals of Urban Economics and economic forces defining urban habitat.			
MODULE 1			
INTRODUCTION TO THEORIES OF URBAN ECONOMICS Basics of demand and supply, Theory of Agglomerations, Bid Rent Theory. Economic principles of Urban Land uses, Urban location theory, Location Models.			
MODULE 2			
INDIAN ECONOMIC REFORMS Effect of Liberalization, Privatization, Globalization of Indian economy on Urban habitat. Global economy and its relation to Indian urban economy.			
MODULE 3			
LAND ECONOMICS Urban land as an economic resource. Land Economics and Spatial Planning mechanisms. Urban Land policy and its implications at various levels of decision making. Land taxation, Land bank and Planning Regulations.			
MODULE 4			
ECONOMICS OF HOUSING MARKETS Urban Housing and Real Estate- Dynamics of Housing Stock, Housing Prices and Consumption patterns. Land utilization costs, Capital cost, Building costs, Replicability and Feasibility.			
MODULE 5			
FINANCE SYSTEMS Sources of Finance, Role of Public and Private sector. Mortgages, Securitization in the real estate sector. FDI in Indian real estate and other global finance mechanisms.			
Course outcome:			
Students are familiarized with the concepts of urban economics and can comprehend economic forces influencing the habitat.			
Reference Books			
1. Jack Harvey, "Urban Land Economics", Palgrave Macmillan, 6th Edition, 2003. 2. Amitabh Kundu, "Urban land markets land price changes", Ashgate,1997. 3. Evans, A, "Economics and land use planning", Blackwell, 2004. 4. Alain Bertaud, "Order without Design: How Markets Shape Cities", The MIT Press, 2018. 5. John F. McDonald, Daniel P. McMillen, "Urban Economics and Real Estate: Theory and Policy", John Wiley & Sons, 2010. 6. Prasanna K. Mohanty, "Planning and Economics of Cities: Shaping India's Form and Future", SAGE Publications India Pvt Ltd, 2018.			

URBAN LENS AND CAPTURES			
Course code	20HDE26B	CIE marks%	100
Teaching Hours/week(L:P:SDA)	(1:0:2)3	SEE marks%	-
		Total Marks	100
Credits	02	Exam Hours	-
Course objectives:			
To understand the role of visual narration in comprehending Urban Habitats.			
MODULE 1			
INTRODUCTION TO URBAN FILM MAKING Videography and film making- Introduction, different film styles and their application in visual urban narratives. Aspects of film making - idea development, story board, cinematography, editing and compiling. Functioning of cameras and use of lenses.			
MODULE 2			
IDEA DEVELOPMENT AND STORY BOARD Theme Identification- culture of a place, community practices, urban issues, events, festivities in the urban realm. Concept and Idea generation. Representation of ideas and visual outline of a film. Evolution of Storyboard. Script writing.			
MODULE 3			
CINEMATOGRAPHY Tools and Techniques of Recording. Visual Composition – Framing, Shots, Motion and Aesthetics. Camera movements, Lighting and sound techniques. Recording the dynamics of selected study area, documentation of temporal variations, movement, activity patterns and other elements of Urban Habitat.			
MODULE 4			
EDITING AND COMPILATION Tools and Techniques of Editing. Use of different software for Editing and Compiling. Inclusion of Interviews, Surveys, Dialogues into the Narrative.			
MODULE 5			
SCREENING Screening and Review. Importance of screening visual urban narratives with various stake holders and comprehending its role in urban transformation.			
Course outcome:			
Students are equipped to make Short films/video documentaries that depict the unique characteristics of a settlement or Urban Habitat.			
Reference Books:			
1. Kevin Lynch, “Image of the city” MIT Press, 1960 2. Mumford, Lewis, “What is a city” – Architectural Record, 1937 3. Jane Jacobs – “The death and life of Great American Cities”, random House, 1961, 4. John Berger “Ways of seeing” Penguin Books, 1972 5. Edwards “Drawing on the right side of the brain” Souvenir Press 2013. 6. Rose Marie San Juan, Geraldine Pratt “Film and Urban Space” Edinburgh University Press, 2014.			

HUMANE HABITAT AND REVITALIZING CORE AREAS			
Course code	20HDE26C	CIE marks%	100
Teaching Hours/week(L:P:SDA)	(1:0:2)03	SEE marks%	-
		Total Marks	100
Credits	02	Exam Hours	-
Course objectives:			
To sensitize students to the core areas and to understand the humane aspects while pursuing development in these Urban Habitats.			
MODULE 1			
CONCEPTS OF HUMANE HABITAT AND CITY CORE Introduction to core areas. Indian and western city cores: The nature, composition, typology, and character. Impact of Work home co-existence and conflicts.			
MODULE 2			
INNER CITY – EVOLUTION AND STRUCTURE Structure and patterns emerging in Inner city cores. Inner city form and pattern development- reasons for their occurrences and impacts.			
MODULE 3			
CITY AS A HUMAN NETWORK Concepts of space and place. Characteristics and engagement of Private space, Social space, Community space and Public space. Study of Public - Private sector interests: Public space as a contested domain.			
MODULE 4			
INTERDEPENDENCIES IN A CITY CORE Understanding the Co-existence /Mutual dependencies - natural, Spatial, social and cultural aspects of the people. Mobility aspects in city core, Pedestrianization and Pedestrian infrastructure.			
MODULE 5			
USER AND THE CITY Seeing the city through the eyes of various users -The child in the city; Gender issues in cities; Differentially abled and public spaces. City as a communication network- Messages, Markers, Signage.			
Course outcome:			
Students are equipped with the concepts of humane habitat and its significance, tools to identify and address revitalization issues in core areas.			
Reference Books			
1. Lewis Mumford, “Culture of Cities”, Thomson Learning, 3rd Edition, 1970. 2. Kevin Lynch, “Good City Form”, MIT Press, 1984. 3. Jan Gehl, “Cities for People”, Island Press, 2010. 4. Charles Montgomery, “Happy City: Transforming Our Lives through Urban Design” Farrar, Straus and Giroux, 2013. 5. Joel Kotkin, “The Human City: Urbanism for the Rest of Us”, Agate Publishing, Incorporated, 2017.			

HABITAT DESIGN STUDIO-III (NEW EXTENSIONS TO EXISTING CITY)			
Course code	20HDC31	CIE marks%	40
Teaching Hours/week(L:P:SDA)	(4:10:2)16	Viva marks%	60
		Total Marks	100
Credits	10	Exam Hours	-
Course objectives:			
Studio intent is to sensitize students to dynamics of conceiving and implementing new urban development.			
Project:			
<p>The project involves a new development/extension to an existing city.</p> <ul style="list-style-type: none"> • A realistic project to be identified with specific client (Real or Imaginary) requirement. • The project should involve large site area, population and complexity of functions. • Geographical settings and siting, Assessment of site resources- Analysis through Ecological theories and processes. Study of Geomorphology, Physiography, Geology, Hydrology, Vegetation and Wildlife. • Study of existing settlements in the influence area, importance of Social Impact Assessment. • Documenting Cultural resources, Heritage Districts and Monuments. • Urban open space systems, Green networks. • Infrastructure Assessment and planning- Road Networks, Site Grading and Drainage, Sewerage, Water Supply and Electricity. • Legal aspects of land ownership, Planning and development tools. • Stakeholder engagement. • Development Strategy- Funding, Cost Recovery Systems, Project formulation, Phasing and Infrastructure Development. <p>Project should conclude in a three-dimensional design expression. Site Study may be carried out in groups and interventions to be submitted individually.</p>			
Course outcome:			
Students are equipped with tools for ecological assessment of site. Students gain the competence to formulate Master Plan for a new development, and generate implementation framework for the project.			
Reference Books			
<ol style="list-style-type: none"> 1. C.A. Doxiadis, "Ekistics", Oxford University Press, 1st edition, 1968. 2. Le Corbusier, "Towards a new Architecture", Martino Fine Books, 2014. 3. David Bell & Mark Jayne, "Small Cities - Urban Experience beyond the Metropolis", Routledge, 1st Edition, 2006. 4. Peter Bosselmann, "Representation of Places - Reality and Realism in City Design", University of California Press, 1998. 5. Cecilia Tacoli-, "Rural Urban Linkages", Routledge; 1st Edition, 1996. 6. Christa van Santen, "Light Zone City - Light Planning in the Urban Context", Birkhauser, 1st Edition, 2006. 7. GivoniB, "Climate and Urban Design", New Age International Private Limited; 2nd Edition, 2012. 8. Ian McHarg, "Design with Nature", John Wiley & Sons, 1995. 9. Geoffrey Broadbent, "Emerging concepts in Urban Space Design", Taylor & Francis, 1stEdition, 1995. 			

URBAN DEVELOPMENT AND ENVIRONMENTAL LAWS			
Course code	20HDC32	CIE marks%	40
Teaching Hours/week(L:P:SDA)	(3:0:0)03	SEE marks%	60
		Total Marks	100
Credits	03	Exam Hours	03
Course objectives:			
To familiarize the students with legal frameworks related to Urban Development and Environmental Conservation.			
MODULE 1			
INTRODUCTION TO LAWS Concepts – Sources of law, meanings of the terms: Law, Legislations, Ordinances, Bills, Acts, Regulations and byelaws. Role of various Organizations in framing and implementing laws, regulations and acts. Evolution of Planning Legislation in India.			
MODULE 2			
LEGAL TOOLS CONNECTED WITH URBAN PLANNING AND DEVELOPMENT Town and Country Planning, Improvement Trust and Development Authorities: Role and Objectives. Contents and procedures for preparation and implementation of Regional plans, Development plans, Town Planning Schemes and Area Plans.			
MODULE 3			
LEGISLATION RELATED TO USE AND CONTROL OF LAND Land acquisition, Transfer of Development Rights. Significance of land development control – Objectives and legal tools, critical evaluation of Zoning, Subdivision regulations, Building regulations and Byelaws, Development Code.			
MODULE 4			
LEGISLATION RELATED TO URBAN AND ENVIRONMENTAL CONSERVATION Legislation on Conservation of natural resources including Mining and Forestry Acts (MOEFCC) Coastal Zone Regulations. Conservation and Management of Ancient Monuments and Archaeological sites and ruins. Legal Framework: Urban Heritage Conservation. Environment v/s Development – Approaches and Analysis.			
MODULE 5			
ENVIRONMENT MANAGEMENT SYSTEMS Need for EMS. ISO – 14001 and its planning implications, Need of ISO, case studies of ISO certified industries, Environmental and Financial Benefits of ISO. Guidelines for Sustainable development by TERI, GRIHA and IGBC.			
Course outcome:			
Students are exposed to various legal systems and organizations involved in urban development, environmental impacts, environment management systems and its salient features.			
Reference Books			
1. Herbert Girardet, (1996) “The GAIA Atlas of Cities”, new edition, Gaia Books Ltd. 2. C S Yadav, “Urban planning and Policies -Volume 16-A -Part A: Reorientation of Policy Norms”, Concept Publishing Company. 3. S. Kostoff. (1991), “The City Shaped. London”, Thames and Hudson. 4. Kevin Lynch, (1995) “City sense and city design”, The MIT Press. 5. P Leelakrishnan, (2016), Environmental Law in India, (4 th Ed.). 6. Shyam Divan, (2001), “Environmental Law and Policy in India: Cases, Materials and Statutes.” (2 nd ed.), OUP India.			

7. Jane Silberstein M.A., Chris Maser, (2019), "Land-Use Planning for Sustainable Development", (2nd ed.), CRC Press.
8. Government of India,(2015) "URDPFI Guidelines, Vol I"
9. "National Building Code of India" (NBC)(2016)

HOUSING AND COMMUNITY: POLICY, FINANCE AND PUBLIC PRIVATE PARTICIPATION			
Course code	20HDC33	CIE marks%	40
Teaching Hours/week(L:P:SDA)	(3:0:0)03	SEE marks%	60
		Total Marks	100
Credits	03	Exam Hours	03
Course objectives:			
To understand the dynamics of housing and the associated processes in defining the habitat.			
MODULE 1			
INTRODUCTION TO HOUSING Definitions and components of housing. Housing in relation to non-residential components of settlement. Housing concepts, characteristics; Housing as a process. Importance of Housing Need Assessment: Housing demand, supply and gap. Role of housing in socio-economic development of the nation.			
MODULE 2			
HOUSING PROVISION AND STRESSED COMMUNITIES Housing tenure- Home ownership, Rental Housing (Public and Private) and its impact (Social and Economic) on the households. Housing Affordability. Housing Stress. Housing Challenges- Slums and Squatter settlements. Methods of enabling housing through Public Housing, Sites and Services, Self Help Groups, NGO engagement.			
MODULE 3			
HOUSING-INDIA The role of government in Indian housing sector - as a developer, financier and policy maker to be critically assessed in the era of privatization. National Housing Policy and Housing schemes in India. Role of HUDCO. State Housing Boards in provision of housing.			
MODULE 4			
HOUSING FINANCE Finance mechanisms for Housing provision- Role of public and private agencies. Role of NHB and other housing finance companies (HFC's), Co-operatives. Mechanisms for housing loans for various income groups and industry. Role of Microfinance.			
MODULE 5			
ROLE OF PRIVATE SECTOR Privatization in housing provision and Role of private sector in housing infrastructure development. Globalization and effect of global capital participation in housing and urban infrastructure sector. FDI in housing and SEBI's regulations on REIT. Legislations related to provision of housing- RERA.			
Course outcome:			
The student gains a holistic understanding of the housing process, provision mechanism and the role of various agencies involved in the process.			
Reference Books			
1. P K Sarkar, "Housing laws in India – Problems and Remedies", Eastern Law House; 2000. 2. KavitaDatta and Gareth Jones, "Housing Finance In Developing Countries", Routledge, 1st Edition, 2012.			

3. Cedric Pugh, "Housing and Urbanization", SAGE Publications Pvt. Ltd; 1st Edition, 1990.
4. P K Guha, "Housing- An Indian Perspective", New Central Book Agency, 1999.
5. K RangaRao& M S A Rao, "Cities and Slums - A study of squatters' settlement in the city of Vijayawada", Concept Publishing Company.
6. Geoffrey Kayne, "Urban Housing in the 3rd world", New Central Book Agency,1999
7. N V Modak, "Town and Country Planning and Housing", Sangam Books Ltd, 1979.

ECOLOGY AND SUSTAINABLE HABITAT SYSTEMS			
Course code	20HDS34	CIE marks%	100
Teaching Hours/week(L:P:SDA)	(1:0:2)3	SEE marks%	-
		Total Marks	100
Credits	02	Exam Hours	-
COURSE OBJECTIVE:			
Understanding the approaches to making sustainable habitats and realizing the impacts of development on the environment.			
MODULE 1			
CONCEPTS AND PRICIPLES OF ECOLOGY Concepts of settlement ecology- Nature as the primary layer, urban development as the secondary layer. Introduction to Sustainability- Definition, principles and Evolution. Sustainability concepts w.r.t Nature, built heritage and community networks.			
MODULE 2			
HUMAN HABITAT AND THE ENVIRONMENT Cities as centers of Consumption of land, water, energy resources and forest cover. Ecological Footprint; Causes and impact of development on ecosystem related to energy and resource depletion. Urban Metabolism- From Linear To Circular.			
MODULE 3			
PRACTICES IN ENVIRONMENT MANAGEMENT Mitigation and adaptation to Climate Crisis in cities. Integrating Disaster Management and building resilience. Planning and management through participatory and inclusive methods. Understanding Green Infrastructure network and its implications through case studies.			
MODULE 4			
PUBLIC HEALTH AND ENVIRONMENT Environment and Informal Settlements; Characteristics, problems faced and their role in the dynamics of a city. Sustainable Urbanization: Bridging the Green and Brown Agendas. Technology and sustainability.			
MODULE 5			
ENVIRONMENTAL IMPACT ASSESSMENT Definition, need, objectives, scope, evolution and its role in the planning process. Methods, advantages, limitations. Legal framework. Assessment of impacts on land and human resources. Public participation.			
COURSE OUTCOME:			
Students are exposed to the principles and practices to achieving sustainable habitats, also the application of tools and techniques of EIA.			
SEMINAR TOPICS:			
1. Public transportation as a key component of building sustainable cities. 2. Conserving built heritage and community networks.			

3. Water Conservation Practices. Water augmentation, Rain water harvesting, waste and waste water recycling, reuse and renewal of habitat resources.
4. Impact of adopting alternative energy to conventional.
5. International agencies, National agencies and Focus groups for environmental and social assessment.
6. Urban Resilience- What distinguishes a resilient city from one that collapses in the face of disruption and adversity?
7. Urban density for low carbon footprint- Efficient Infrastructure and planning.
8. Eco-tourism; ecological conservation and educating travelers on local environments and natural surroundings while including the local communities and promoting local culture.

REFERENCE BOOKS

1. Dominique Gauzin-muller, "Sustainable Architecture and Urbanism", Pearson; 3rd Edition, 2011.
2. GivonyB , "Urban Design in Different Climates", Princeton University Press, Revised Edition, 2015.
3. P.L.Lombardi, "Evaluation of the Built Environment for Sustainability", Wiley, 1989.
4. Sudhakar Reddy, "Urban Energy Systems", Blackwell, 1st Edition, 1998.
5. B.R.Barthwal, "Environment Impact Assessment", Concept Publishing Company;1st Edition, 2010
6. James Lovelock "Revenge of Gaia", 2006.
7. Peter Calthorpe, "Urbanism in the Age of Climate Change", 1st Edition, 2010.
8. Douglas Farr, "Sustainable Urbanism: Urban Design With Nature", 1st Edition, 2009.

PROJECT PLANNING, ANALYSIS & APPRAISAL / EVALUATION			
Course code	20HDS35	CIE marks%	100
Teaching Hours/week(L:P:SDA)	(0:2:2)04	SEE marks%	-
		Total Marks	100
Credits	02	Exam Hours	-
Course objectives:			
To introduce the students to methods of implementation and management of projects related to Urban Infrastructure.			
MODULE 1			
INTRODUCTION TO PROJECT PLANNING Introduction to terminologies and concepts of Project planning. Urban Projects: Scales, Institutions involved and their organization structure. Public relation and citizen participation: Personnel management, Manpower Planning, performance, appraisal, motivation and morale. Corporate Management: Systems approach to Urban Management, organizational design, management information systems.			
MODULE 2			
CONCEPTS OF PROJECT ANALYSIS Requirement Analysis, Feasibility Check and Techniques involved. Operational Analysis: Performance, Business, Environment, Scenario Setting. Identification and estimation of project impacts, Desirable and undesirable project impacts. COST BENEFIT ANALYSIS Identifying costs and benefits, Pricing, Opportunity costs, Shadow Prices, Cash flow, Payback periods and Internal Rate of Return.			
MODULE 3			
METHODS OF PROJECT EVALUATION SINGLE AND MULTIPLE CRITERIA PROJECT EVALUATIONS Details of single Criteria cost -benefit analysis and its application with case studies. Concept of multi-criteria project evaluation and their applications: Concept of time scheduling, Project network and monitoring, PERT and CPM with their application in planning projects, Project monitoring under resource constraints.			
MODULE 4			
LOCAL PLANNING AND BUDGETING Methods of Urban Finance: Financial perspective of Urban Development. Municipal Corporate Planning, Program Planning and Budgeting, Local Financial Management, Financial Control & Delegation, Performance evaluation techniques, Cash flow management, Local debt management, Financial Information System, Municipal fiscal programming, Project scheduling and budgeting.			
MODULE 5			
PROJECT IMPLEMENTATION PLAN: Project Implementation Techniques and Phasing Technical Aspects of cost, schedule and quality of deliverables. Human Aspects of Authority, orientation, Motivation and Group orientation. Risk Management and Execution Plans. New methods, practices and technological advancements in project Implementation- Best Practices.			
SUGGESTED SEMINAR TOPICS: 1. Current Infrastructure projects: Best practices and comparisons with respect to Project 2. Design and formulation.			

3. Best practices in Implementation Management.
4. Procurement in Project planning: Public and Private Sectors.
5. Health, Human and Environmental factors in large infrastructure and urban projects.
6. Studies on Organizational design.
7. Social Cost Benefit analysis.
8. Risk analysis.
9. Public sector investments in urban infrastructure.

Course outcome:

Students are equipped with the understanding of concepts of project evaluation and methods of urban financing and budgeting. They are aware of the role of government agencies and the importance of citizen participation in implementation and management of urban infrastructure initiatives.

Reference Books

1. Daniel Halpin and Ronald Woodhead, "Construction Management", Wiley, 2nd Edition, 1997.
2. Krishnamurthy and S.V.Ravindra, "Construction Management", CBS Publishers & Distributors Pvt. Ltd, 2nd Edition, 2017.
3. Prasanna Chandra, "Projects Planning, Analysis, Selection, Financing, Implementation and Review", McGraw-Hill, 8th Edition, 2017.
4. L S Srinath, "PERT and CPR-Principles and Application", Affiliated East-West Press, 2001.
5. Harold Kerzner, "Project Management", Wiley, New York, 2003.
6. Chitkara, "Construction Project Management", Tata McGraw- Hill, New Delhi.
7. Kamaraju Ramakrishna, "Essentials of Project Management", PHI Learning, New Delhi, 2010.

DISSERTATION-I			
Course code	20HDS36	CIE marks%	100
Teaching Hours/week(L:P:SDA)	(1:2:0)03	SEE marks%	-
		Total Marks	100
Credits	02	Exam Hours	-
Course objectives:			
The course intent is a research exploration based on an identified urban habitat theme/topic to lead to Dissertation-II project.			
Project:			
<p>The research project will be taken up by students individually.</p> <p>Students develop their research based on the outline:</p> <ul style="list-style-type: none"> Identifying the issue and Framing the research objective. Raise research questions. Formulate a methodology for research. Review of Theoretical Framework related to the identified theme/topic. Review of Literature through Case studies related to the identified theme/topic. <p>Three seminars to be given by each student.</p>			
Course outcome:			
Students develop skills to generate research context for the identified theme/topic to progress into Dissertation-II Project.			

REAL ESTATE DEVELOPMENT AND FINANCE			
Course code	20HDE37A	CIE marks%	100
Teaching Hours/week(L:P:SDA)	(1:0:2)03	SEE marks%	-
		Total Marks	100
Credits	02	Exam Hours	-
Course objectives:			
To familiarize students to the real-estate market mechanisms and their implications on the process of resource mobilization and city development.			
MODULE 1			
INTRODUCTION TO REAL ESTATE Introduction and history of Real-estate Development. Real-estate market and assessment techniques, economic cycles, demand and supply, values and rental structure and advertising.			
MODULE 2			
REAL ESTATE FINANCING AGENCIES International investments and packaging, implications on Real estate market, public-private participation and Real-estate development agencies. FDI in real estate sector.			
MODULE 3			
REAL ESTATE REGULATION AND TECHNIQUES Real estate laws, rent control laws and other legal framework. Investment and risk assessment techniques, market surveys and research, rating system in Real-estate market.			
MODULE 4			
POST DEVELOPMENT MAINTENANCE Infrastructure development and quality control, Post development management and maintenance in Real-estate development.			
MODULE 5			
REAL ESTATE AS A HABITAT DETERMINANT Impacts on urban form. Good practices in development of Real estate through case studies. Documentation of Real-estate practices in India and foreign markets.			
Course outcome:			
Students gain knowledge on various facets of real estate market mechanisms and their impact on habitats.			
Reference Books			
1. Michael Ball, Colin Lizieri, Bryan D. Macgregor, "The Economics of Commercial Property Markets", Routledge, 1st Edition, 1998. 2. Adrienne Schmitz, Deborah L Brett, "Real Estate Market Analysis: A Case Study Approach", Urban Land institute, 2nd Edition, 2001. 3. Mike E. Miles, Laurence M. Netherton, Adrienne Schmitz, "Real Estate Development: Principles and Process", Urban land institute, 5th Edition, 2015. 4. Prashant Das and Divyanshu Sharma, "Real Estate Finance in India", Sage Publications, 2013. 5. CA Madhukar Hiregang, CA Virender Chauhan, CA Sudhir V S and CA Roopa Nayak, "A Practical Guide to GST on Real Estate Industry", Bloomsbury, 2019.			

FUTURE OF HABITAT: CRITICAL ISSUES			
Course code	20HDE37B	CIE marks%	100
Teaching Hours/week(L:P:SDA)	(1:0:2)03	SEE marks%	-
		Total Marks	100
Credits	02	Exam Hours	-
Course objectives:			
To sensitize students on alternative scenarios for the future of habitats.			
MODULE 1			
EVOLUTION OF URBAN SETTLEMENTS Economic systems, political power structure and city formations. Industrial Revolution and Urbanization.			
MODULE 2			
CONTEMPORARY CITIES New Urbanism, Infrastructuralism, Everyday urbanism, Adhoc urbanism as futures. Cities within Cities.			
MODULE 3			
NEW TECHNOLOGIES AND CITY FORM Wired Cities, globalized cities and controlled districts, pricing, exclusion, information highway and the breakdown of National boundaries. Neo-nomadism.			
MODULE 4			
URBAN FUTURE Search for identities by globalized communities -Neo classicism, vernacular architecture and regionalism. The future of people, Parallels in human development and urban development.			
MODULE 5			
URBAN IDENTITY Loss of place, breakdown of identities and formation of new class structure. Biotechnology and the loss of rural identities. The fusion of town and country.			
Course outcome:			
Students are familiarized with concepts of contemporary urban habitats and their emerging challenges.			
Reference Books			
1. Christopher Alexander, Sara Ishikawa, Murray Silverstein, "A Pattern Language", Oxford University Press, 1977. 2. Geoffrey Broadbent, "Emerging concepts in Urban Space Design", Taylor & Francis, 1stEdition, 1995. 3. Tom Verebes, "Master Planning - The Adaptive City - Computational Urbanism in the Twenty-First Century", Routledge, 1st Edition, 2013. 4. Chiu, Mao-Lin, and ChengzhiPeng. "Insights of 3D Digital Cities: The Past, Present and Futures." In <i>CAAD Talks</i> , 13-36. Vol. 4. CAAD Talks 4. Taipei, Taiwan: Archidata Co., Ltd., 2005. 5. Victor Gruen, "The Heartof our Cities - The Urban Crisis: Diagnosis and Cure", Simon and Schuster; 1st Edition, 1964.			

STRATEGY MANAGEMENT AND IMPLEMENTATION OF PROJECTS			
Course code	20HDE37C	CIE marks%	100
Teaching Hours/week(L:P:SDA)	(1:0:2)03	SEE marks%	-
		Total Marks	100
Credits	02	Exam Hours	-
Course objectives:			
To aid the student in development of strategic vision, setting out objectives, formulating and implementing strategies.			
Module 01			
INTRODUCTION TO STRATEGY MANAGEMENT			
Concepts of Strategy management. Principles, techniques and study of various models.			
Module 02			
STRATEGY FORMULATION FRAMEWORK- DIFFERENT PERSPECTIVES			
Business Perspective- Organizational chart. Policy Perspective- policies, program and rules. Design Perspective- Tactical planning, Deployment of resources. Measures to stay informed and respond to trends in competition and technology while not losing sight of the strategic objective.			
Module 03			
CORPORATE GOVERNANCE AND STRATEGY PLANNING			
Concepts, value of vision, mission and corporate objectives, the role of corporate governance and stakeholder management, coherence in strategic direction. Understanding the classic theories and frameworks involved in the project. Understand different options of implementation plan through case studies and best practices.			
Module 04			
STRATEGY MANAGEMENT PLAN			
Arriving at goals and metrics. Aligning the strategic principles, organization structure, principles and features that influence strategy execution, key actions and challenges. Exploring the risks and other resistance for the project and ways to address them.			
Module 05			
STRATEGY EVALUATION – PRACTICAL PERSPECTIVES			
Arriving at the Implementation module, implementation plans. Strategic evaluation of the project- Analysis and assessment.			
Course outcome:			
Students are equipped with knowledge of concepts such as goal setting, value creation, global integration and diversification involved in projects.			
Reference Books:			
1. Dess, G. G., Lumpkin, G. T., Eisner, A. B., McNamara, G. “Strategic Management: Creating Competitive Advantages”, 7th Edition, McGraw-Hill International Edition, McGraw-Hill/Irwin. 2013. 2. Hill, C. W. L. & Jones, G. R. “Strategic Management: An integrated approach”, 8th Edition, Houghton Mifflin. 2008. 3. Terry Schmidt, “Strategic Project Management Made Simple: Practical Tools for Leaders and			

INTERNSHIP			
Course code	20HDI38	CIE marks%	-
Teaching Hours/week(L:P:SDA)	-	Viva marks%	100
		Total Marks	100
Credits	03	Exam Hours	-
Course objectives:			
The Internship is intended to be an introduction to the various dimensions of professional practice.			
Internship/Professional Practice			
<p>The student is expected to work in a large Urban Design and Planning firm handling the following types of projects:</p> <p>The student is expected to work in a firm handling projects of following nature-</p> <p>a) Large scale projects like layouts, housing complexes, campuses involving a number of related buildings, site planning and landscaping.</p> <p>b) Urban infill projects.</p> <p>c) Urban Brown field projects.</p> <p>d) Revitalization projects of decaying parts of the city .</p> <p>The student is expected to familiarize himself/herself in the design decision making process involving urban issues and parameters in the design of cities.</p> <p>The student is expected to familiarize himself/herself with the following;</p> <p>a) Administration of office b) soliciting and obtaining projects c) client meetings d) site visits e) drawings and detailing f) design process and presentation.</p> <p>For the viva exam, the following need to be presented</p> <p>a) Statement indicating the various types of works done by the student</p> <p>b) Daily log to be maintained by the student.</p> <p>c) Drawings related to projects with which the student was associated</p> <p>d) Photographs of project sites.</p> <p>e) Any other material in support of student's involvement in the work.</p> <p>The eight weeks (56 days) should immediately precede the commencement of regular course work of third semester.</p>			
Course outcome:			
<p>At the end of the course the student will be able to:</p> <ul style="list-style-type: none"> • Acquire practical industry experience. • Apply knowledge and skills gained through internship back into studio. • Develop and refine oral and written communication skills. • Identify areas for future knowledge and skill development. • Expand intellectual capacity, credibility, judgment, intuition. <p>Acquire the knowledge of administration, marketing, finance and economics.</p>			
<p>Teams", Wiley, 2nd Edition, 2020.</p> <p>4. Tony Grundy, " Strategy Implementation Through Project Management" , Thorogood, 2001.</p> <p>5. MihályGörög, "A Strategic-Oriented Implementation of Projects", Project Management Institute, 2013.</p>			

DISSERTATION-II			
Course code	20HDC41	CIE marks%	40
Teaching Hours/week(L:P:SDA)	(5:18:14)20	Viva marks%	60
		Total Marks	100
Credits	21	Exam Hours	-
Course objectives:			
The studio focuses on project formulation strengthened by relevant research and synthesis of design solution for the identified Urban Habitat theme.			
Project:			
<p>The dissertation is the complete assimilation of academic and professional experience of the student.</p> <ul style="list-style-type: none"> • The scope of the dissertation will encompass the study of urban issues, current dilemmas in the urban-scape and the related theoretical framework, culminating in Design. • The dissertation would examine social, physical, economic, environmental, urban conservation issues with participatory and infrastructure provision-led objectives. • The project definition, program development, design and development process and implementation framework to form integral part of the project structuring. <p>Each student is required to select and work on an area/ topic approved by the Institution. Topic should be based on current issues, research and professional interests. Format and guidelines shall be as laid down by the Institution.</p>			
Course outcome:			
Students will be able to conceive and develop design proposals for issues based on Human Habitat supported by relevant research. Students are equipped with skills to formulate the project and the implementation framework.			

SUSTAINABLE DESIGN PRACTICES			
Course code	20HDE42A	CIE marks	100
Teaching Hours/week(L:S:SDA)	(1:0:2)3	SEE marks	-
		Total Marks	100
Credits	02	Exam Hours	-
COURSE OBJECTIVES			
To familiarize students with sustainable design practices in an urban habitat.			
MODULE 1			
INTRODUCTION TO CONCEPTS Introduction to Sustainable Development Goals and its relevance to cities. Environmental, Economic and Social Sustainability. International policies on Sustainable Design Practices.			
MODULE 2			
SUSTAINABLE WATER MANAGEMENT Innovative water management systems, traditional water harvesting and conservation techniques, water augmentation and sustainable storm water Management systems, Waste water recycling.			
MODULE 3			
ENERGY EFFICIENCY Sustainable energy consumption, Optimization of energy usage, renewable energy,clean energy. Innovative usage of alternative energy. Sustainable waste management. Green Infrastructure network. Role of Urban Agriculture in sustainable city discourse.			
MODULE 4			
SUSTAINABLE URBAN ENVIRONMENT City as an Ecosystem, Sustainable Land use and sustainable communities, Ecological design and ecological indices. Sustainable Transportation system.			
MODULE 5			
CARBON NEUTRAL CITIES Goals, objectives, process and outcome; understanding through case studies. Innovative public-private partnerships for a social innovation in the transition to low carbon-energy. Study of best practices adopted by cities across the world.			
COURSE OUTCOME			
Students are equipped with the knowledge of sustainable design practices that need to be integrated in an urban habitat.			
REFERENCE BOOKS			
1. John Flint, Mike Raco “The Future of Sustainable Cities: Critical Reflections”, The Policy Press2012 2. Paul Chatterton “Unlocking Sustainable Cities: A Manifesto for Real Change” PlutoPress,2019 3. Georg Hausladen, Daniel Czechowski, Thomas Hauck “Revising Green Infrastructure: Concepts Between Nature and Design” CRC Press,2014			

4. Giard Jacques “The Handbook of Design for Sustainability” Bloomsbury, 2013
5. Federico Caproti and Li Yu “Sustainable Cities in Asia” Routledge, 2017

DESIGN THINKING AND INNOVATION			
Course code	20HDE42B	CIE marks%	100
Teaching Hours/week(L:P:SDA)	(1:0:2)3	SEE marks%	-
		Total Marks	100
Credits	02	Exam Hours	-
Course objectives:			
To explore and develop a Human centered approach to Design and to view design innovations from a user friendly perspective.			
Module 01			
INTRODUCTION TO DESIGN THINKING Concepts involved in design thinking. To develop a frame work of Inspiration, Ideation and Implementation, for a solution-based approach to problem solving. Skill driven design thinking like Analysis, checking for extreme users, ideation, synthesis of information.			
Module 02			
APPROACHES AND PERSPECTIVES IN DESIGN THINKING Normative positions in Design Thinking. Systems Approach to Design Thinking. Procedural aspects of Design Thinking.			
Module 03			
DESIGN DEVELOPMENT Discovering the actual stake holders and the complexity of project. Understanding concept development in various projects through case studies: in Architecture, Design and Urban Place making. Building an innovative framework around design development.			
Module 04			
STRUCTURING THE DESIGN Role of multiple team works and brainstorming sessions in creating ideas. Structuring a timeline for design development and design building. Prototyping and constructing user surveys.			
Module 05			
PRODUCT DEVELOPMENT AND TESTING Design for services. Design development- solution oriented approach. Scanning the project for financial feasibility across different approaches. Live case studies- understanding the approaches taken.			
Course outcome:			
Students are equipped to frame a design problem with empathy and adopt innovative, hands on approach to design through team work, prototyping and testing.			
Reference Books			

1. Peter G. Rowe, "Design Thinking", MIT Press, 1987.
2. Tim Brown, "Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation", Harper Collins, 2009.
3. Nigel Cross, "Design Thinking: Understanding How Designers Think and Work" , Berg, 2011
4. Thomas Lockwood, "Design Thinking: Integrating Innovation, Customer Experience, and Brand Value", Allworth, 2010.
5. Jeanne Liedtka, Andrew King, Kevin Bennett," Solving Problems with Design Thinking: Ten Stories of What Works", Columbia University Press, 2013.