

KALASALINGAM ACADEMY OF RESEARCH AND EDUCATION

(Kalasalingam University)

Anand Nagar, Krishnankoil

SRIVILLIPUTTUR – 626 126, Virudhunagar Dist, TN

KALASALINGAM SCHOOL OF ARCHITECTURE



**Master of Architecture
M. Arch (Habitat Design)**

**Curriculum
& Syllabus**

2022

University Vision

To be a Centre of Excellence of International Repute in Education and Research

University Mission

To produce Technically Competent, Socially Committed Technocrats and Administrators through Quality Education and Research

Department Vision

To advocate a design philosophy that draws inspiration from the rich cultural heritage of India while simultaneously embracing the developments in science and technology to produce architects of international competence.

Department Mission

To educate budding architects who will contribute to the socio-economic and cultural development of India and the broader global community through responsible participation in the process of design and construction of the built environment.

Programme Outcomes (PO)

P.O 1 Equip the students on the advance theories of design and its impact on cities of India and globally.

P.O 2. Enable students to assess the social, economic and cultural impact on the various levels of built environment in a habitat and equip them to prepare mitigation strategies

P.O.3 Equip students with know-how and knowledge of various tools, methods and applications used in urban planning and habitat design.

P.O.4 Empower students with the knowledge of environmental impacts consequent of larger habitation development and equip them to provide professionally ethical and ecologically sustainable design solutions.

P.O.5 Enable students to understand the valuable inputs from Urban heritage, Traditional and vernacular knowledge system and application of the same in the holistic design process of Human habitat.

Programme Educational Objectives (PEO):

On completion of the M.Arch degree Programme in Habitat Design, the graduates will acquire:

- **Technical expertise:** Exercise technical know-how and professional wisdom to provide expert service towards the design of large-scale habitats.
- **Professional Rigor:** Well-seasoned in the field of Habitat Planning and design, empowered by professional ethics and ecological awareness.
- **Organizational Skills:** Show up as lead Architects specialized in Human Habitat design capable of leading and team building large scale projects.

Programme Specific outcomes (PSO):

The Programme Specific Outcomes of M.Arch Habitat Design are: On completion of the Programme, the students will be able to:

- Think and act with social responsibility in the milieu of nature, culture, heritage and buildings
- Understand the complex network systems that exist in any traditional human habitat
- Identify and differentiate the natural, human-constructed, and human behavioral built environment from their morphological setup presented in its own way of life
- Use necessary documentation tools such as GIS, CAD and other suitable Digital

methods to delineate the area of intervention in problematic urban areas

- Suggest sustainable Urban Planning and Housing Design solutions
- Propose guidelines and controls for developments in new and old urban developments in environmentally sensitive areas
- Apply the methods and techniques for conducting research in their area of study.
- Demonstrate their field of knowledge by various design approaches based on complexity of issues.
- Deliver quality and innovative design thoughts for new housing developments
- Lead a team of professionals related to planning and design and to work effectively as an individual, and also as a member in multicultural and multidisciplinary teams in the field of urban development
- Effectively communicate about their area of expertise, able to realize and write sound reports on holistic design approaches, make effective technical presentations for various governmental agencies and for the general public

M.ARCH HABITAT DESIGN CURRICULUM STRUCTURE		
S.No	COURSE TYPE	CREDITS
1.	FOUNDATION CORE	06
2.	PROGRAMME CORE	27
3.	EXPERIENTIAL ELECTIVE COURSE	09
4.	EXPERIENTIAL CORE COURSE	38
	TOTAL CREDITS TO BE EARNED	80

FOUNDATION CORE						
COURSE CODE	COURSE NAME	L	T	S	X	C
MHD22R5101	URBAN AND RURAL HOUSING	3	0	0	0	3
MHD22R5102	URBAN DESIGN THEORIES	3	0	0	0	3
PROGRAMME CORE						
COURSE CODE	COURSE NAME	L	T	S	X	C
MHD22R5103	PLANNING THEORY AND TECHNIQUES	3	0	0	0	3
MHD22R5104	URBAN TRANSPORTATION AND NETWORKS	3	0	0	0	3
MHD22R5201	PLANNING LEGISLATION	3	0	0	0	3
MHD22R5202	ECOLOGY AND SUSTAINABLE HABITAT SYSTEMS	3	0	0	0	3
MHD22R5203	GIS MODELLING IN URBAN PLANNING	3	0	0	0	3
MHD22R5206	SEMINAR: DISSERTATION	3	0	0	0	3
MHD22R5301	INFRASTRUCTURE PLANNING AND MANAGEMENT	3	0	0	0	3
MHD22R5302	RESEARCH METHODS	3	0	0	0	3
MHD22R5401	REAL ESTATE DEVELOPMENT AND FINANCE	3	0	0	0	3
EXPERIENTIAL ELECTIVE COURSE						
COURSE CODE	COURSE NAME	L	T	S	X	C
MHD22R5105	SMART CITY PLANNING	2	0	0	3	3
MHD22R5106	HEALTHY HABITATS	2	0	0	3	3
MHD22R5107	HABITATS OF FUTURE	2	0	0	3	3
MHD22R5108	PROGRAMMING FOR URBAN ANALYTICS	2	0	0	3	3
MHD22R5204	HOUSING AND COMMUNITY	2	0	0	3	3
MHD22R5205	HERITAGE HABITATS: CONSERVATION AND RENEWAL	2	0	0	3	3
MHD22R5303	URBAN DEVELOPMENT AND ENVIRONMENTAL LAWS	2	0	0	3	3
MHD22R5304	VERNACULAR ARCHITECTURE AND PLANNING	2	0	0	3	3
MHD22R5305	ENVIRONMENTAL PSYCHOLOGY AND BEHAVIORAL STUDIES	2	0	0	3	3
MHD22R5306	PEDAGOGY: BASICS FOR ARCHITECTURE EDUCATION	2	0	0	3	3
MHD22R5307	ANTHROPOLOGY AND ARCHITECTURE	2	0	0	3	3
EXPERIENTIAL CORE COURSE						
COURSE CODE	COURSE NAME	L	T	S	X	C
MHD22R5181	HABITAT DESIGN STUDIO - I	0	0	6	6	8
MHD22R5282	HABITAT DESIGN STUDIO – II	0	0	6	6	8
MHD22R5383	HABITAT DESIGN STUDIO III	0	0	6	9	9
MHD22R5484	THESIS	0	0	9	12	13
Total Credits to be earned for completion of M. Arch (Habitat Design) Programme = 80						

MHD22R5101	URBAN AND RURAL HOUSING	L	T	S	X	C
		3	0	0	0	3
OBJECTIVE:						
<ul style="list-style-type: none"> To draw on the literature to understand the fundamentals to housing practice. To highlight the existing housing conditions and related issues and study the various plans and policies for the development of the same. To introduce to the students, the institutional framework for development and finance in this field 						
UNIT I	HOUSING AND DEVELOPMENT	9				
Importance and Reflections of Housing on Social, Cultural and Economic Development – Role of Central Government and its Public Agencies in Housing Development – National Housing Policy in India – Comparison of Housing Policies and Programme of Developed and Developing Countries						
UNIT II	HOUSING SCENARIO IN INDIA	9				
Housing Stock and its Adequacy in Urban & Rural Settlements – Housing Quality and its Determinants – Housing Supply and Demand Assessments – External and Internal factors of influence on Housing Development –Trends in Housing Market – Five Year Plans of GOI.						
UNIT III	HOUSING PROGRAMMES IN INDIA	9				
Nature and Type of housing development Programmes - Sites and Services, LIG, MIG, HIG Schemes, - Rural Housing Schemes - Slum Housing Programmes - Cooperative and Private Sector Housing,						
UNIT IV	INSTITUTIONAL FRAMEWORK	9				
Housing agencies for Policymaking, Programme Formulation, and Implementation, - Objectives and Functioning of agencies like TNHB, TNSCB, CMDA, Cooperatives and other Department. Agencies – Support of the National and State Governments – Housing Programmes are announced from time to time.						
UNIT V	HOUSING FINANCE	9				
Formal and Informal Systems of Finance - Financing agencies and their Terms of Lending – Direct and Indirect Incentives for Housing Development - Housing Affordability in relation to demographic, social and economic status.						
TOTAL: 45 PERIODS						
REFERENCE:						
<ol style="list-style-type: none"> 1st Edition Rural-Urban Linkages for Sustainable Development, by Armin Kratzer, Jutta Kister, Copyright Year 2021, Published by Routledge 1st Edition, Rural Housing and Economic Development, edited By Don E. Albrecht, Scott Loveridge, Stephan Goetz, Rachel Welborn, Copyright Year 2018 National Urban Housing and Habitat Policy – 2007, Government of India, Ministry of Housing & Urban Poverty Alleviation, New Delhi. Annual Report 2010-2011, Ministry of Housing & Urban Poverty Alleviation, Government of India. Manual under the right to information act, 2005, Government of Tamil Nadu, Tamil Nadu Housing Board, Chennai. 1st Edition, Housing and Finance in Developing Countries, By Kavita Datta, Gareth Jones, Copyright Year 1998 						
MHD22R5102	URBAN DESIGN THEORIES	L	T	S	X	C
		3	0	0	0	3
OBJECTIVE:						
To introduce the students to the concept of holistic Habitat Design with Socioeconomic and Historic determinants and dimensions of urban Design and planning						
UNIT I	INTRODUCTION TO URBAN FORM	10				
Components of human habitat, Evolution of cities and towns in India, Socioeconomic and Historic determinants of urban growth and urban form. Reading the city. Social structure, cognition, experience, and urban form.						
UNIT II	URBAN DESIGN IN PLANNING AND ARCHITECTURE	10				
Dimensions of urban design. Grain texture scale, socio spatial schema etc. Urban design vocabulary. Habitat Design, Urban Design and their relation with planning and architecture. Views of Design of habitat as extension architecture (mega architecture) and as architectural expression of planning. 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.						
UNIT III	URBAN CONCEPTS	10				
Evolution of concepts of urban form and design in different cultures and in India. Concepts in urban Design and planning. Role of big data analytics in inclusive urbanism						
UNIT IV	URBAN DESIGN APPROACHES	8				
Rise of Advocacy Planning, changing role of NGOs and Urban Social Movement in India. Urban design survey - inventories; techniques/approaches to urban design, typology, phenomenology, behavioral studies, diagramming-mapping						
UNIT V	URBAN DESIGN THEORIES	7				
Imageability, townscape and elements of urban design (Gordon Cullen, Kevin Lynch), Jane Jacobs, Genius Loci, responsive environments, Aldo Rossi – Urban Artifacts, William H Whyte, Jan Gehl – Cities for people - Historical examples of urban design projects.						
TOTAL: 45 PERIODS						
SUGGESTED SEMINAR TOPICS/ TERM PAPERS:						
Emerging issues – social and communal conflicts in urban area. Urban design at micro level: campus planning, city centers, transportation corridors, and residential neighbourhood; water fronts.						
REFERENCE:						
1. A Sense of Space : The Crisis of Urban Design in India,by Ranjit Sabikhi,HarperCollins Publishers India,2019						
2. Urban street and Squares by Cliff Moughtin, 2007,Architectural Press						
3. 'Life between Buildings- Using Public Space' by Jan Gehl, Island Press, 2001						
4. An Introduction to Urban Design by Barnett, Jonathan, 1982, New York : Harper & Row. Good City Form by Kevin Lynch,Copyright year 1980, MIT Press						
5. City Planning according to Artistic principles by Camillo Sitte, Random House, 1965						
6. Image of City by Kevin Lynch, The M.I.T. Press, Massachusetts Institute of Technology, Cambridge, Massachusetts, and London, England, Copyright Year 1960						
7. TSS for Urban Design,1951, McGraw - Hill						
MHD22R5103	PLANNING THEORY AND TECHNIQUES	L	T	S	X	C
		3	0	0	0	3
OBJECTIVE:						
To introduce the basic concept of urban planning in terms of tools and methods and their application in modern context.						
UNIT I	PLANNING PRINCIPLES	10				
Planning terms and definitions. Basic principles of planning of settlements. Aims & Objectives of Physical Planning, Levels of Planning in India, Characteristics of Planning, Models of the Planning Process, Components of settlement structure.						
UNIT II	URBAN PLANNING	10				
Preparation of Urban Development Plans, types, scope, purpose, contents and approaches to the interim and comprehensive plans: Structure Plan, Master Plan, Zonal Development Plan, and Strategic Planning. Theories of Urban structure, Urban Sub-systems						
UNIT III	URBAN REGULATIONS	10				
Concepts of Urban Land use, Systems affecting land uses and rationale for land use planning, Locational attributes of urban land uses. Legal frame work, Regulations, byelaws, standards and norms and their basis.						
UNIT IV	URBAN SURVEYING	10				
Survey Research Process – Primary & Secondary sources of data, techniques of data collection, analyzing and presenting physical and socio-economic data, questionnaire design, administration of field surveys, Sampling, sample designs, size, types, sources of various data in India						
UNIT V	PLANNING TECHNIQUES	5				
Techniques of understanding spatial structures of cities and towns. Analysis of structure of nodes, roads and networks and spatial structure. Use of aerial and satellite remote sensing for planning. Introduction to GIS						
TOTAL: 45 PERIODS						

SUGGESTED SEMINAR TOPICS/ TERM PAPERS:						
Theories of Urban Planning, Choice Theory, Advocacy Planning, Action Planning, Mixed planning – Relevance in Indian context						
REFERENCE:						
1. 1st Edition, Reflexive Reading of Urban Space, By Mona A. Abdelwahab, Copyright Year 2018						
2. Cities, Urbanisation & Urban Systems (Settlement Systems) by Siddhartha N. Mukherjee, Copyright year 2019, Published by Kitab Mahal Publishers & Distributors						
3. Cities of Tomorrow: An Intellectual History of Urban Planning and Design Since 1880, 4th Edition, Peter Hall, 2014, Wiley-Blackwell						
4. Encyclopaedia of Economic Planning and Development by K.P. Yadav, 2006, Sarup & Sons, New Delhi, India						
5. The Urban Pattern, Simon Eisner, Arthur Gallion, Stanley Eisner, John Wiley & Sons, 1993						
MHD22R5104	URBAN TRANSPORTATION AND NETWORKS	L	T	S	X	C
		3	0	0	0	3
OBJECTIVE:						
To introduce the fundamentals of urban transport planning, urban networks and multimodal transport systems developed in response to and as an organizing factor of spatial structure of habitat systems						
UNIT I	URBAN TRANSPORTATION PROCESS	10				
Transport Planning Process: Scope – interdependence of land use and traffic – systems approach to transport planning – Transport surveys – definition of study area – zoning survey – types and methods inventory on transport facilities – inventory of land use and economic activities						
UNIT II	TRIP GENERATION	9				
Factors governing trip generation and attraction rates – multiple linear regression analysis – category analysis – critical appraisal of techniques. (No Numerical Problems)						
UNIT III	TRIP DISTRIBUTION METHODS	8				
Presentation of trip distribution data – PA matrix to OD matrix – Growth factor methods – gravity model and its calibration – opportunity model (No Numerical Problems)						
UNIT IV	MODALSPLIT ANALYSIS	9				
Influencing factors – Earlier modal split models: Trip end type and trip interchange type – limitations – Disaggregate mode choice model – Logit model – binary choice situations – multinomial logit model – model calibration. (No Numerical Problems)						
UNIT V	ROUTE ASSIGNMENT	9				
Description of highway network – route choice behaviour – shortest path algorithm assignment techniques – all nothing assignment – multi path assignment – capacity restrained assignment – diversion curves						
TOTAL: 45 PERIODS						
REFERENCE:						
1. Planning, Transport and Accessibility by Carey Curtis, 2021, Lund Humphries Publishers Ltd						
2. Highway Engineering by Khanna and Justo, 2019, Pragati Book Centre, Pune						
3. Urban Transport Planning and Developmental Approach by Dimitriou H.T, 2012 by Routledge						
4. Traffic Engineering and Transportation Planning by Kadiyali L R., 1999, Khanna Publishers, Delhi						
5. Urban Transport Planning and Design by John Black, 1981, Routledge						
6. An Introduction to Transportation Planning by Michael J Bruton, 1970, Routledge						
MHD22R5181	HABITAT DESIGN STUDIO I:	L	T	S	X	C
		0	0	6	6	8
OBJECTIVE:						
The Habitat Studies Studio aims at studying and understanding the fabric of existing habitat and to understand determinants and causative forces responsible for urban growth and change - the resulting physical manifestations- development process to provide the student with studio skills related to contemporary design issues to fulfil the broad conceptual frame of the courses.						
OUTLINE:						
Studio aims at study of an existing urban fabric and propose interventions The Studio will be divided to the following modules:						
a) Documentation of a precinct-						
1. Addressing principles of site planning, natural features and environment, typology / morphology,						

density patterns etc.
 2. Infrastructure and habitat management standpoint
 3. Human network, through ownership, use cycles, associational value etc.
 4. Presentation techniques
 b) Identification of problems and issues.
 c) Compiling the documentation as a report. d) Proposed conceptual interventions.

THE DESIGN WORKSHOP: The workshop - is a seminar course cum design conducted by invited professionals as well as faculty who may demonstrate, the design development process of project. Projects may vary in scale and content and should preferably raise urban level or fundamental design issues.

TOTAL: 180 PERIODS

SUGGESTED SEMINAR TOPICS/ TERM PAPERS:
 Critical readings of selected essays and commentaries on contemporary urban society and habitat issues in India and developing countries Studio exercises may be carried out in groups and interventions to be submitted individually. Submissions shall be in the form of drawings and Report. Knowledge of CAD is a prerequisite.

REFERENCE:
 1. 1st Edition Essential Urban Design, A Handbook for Architects, Designers and Planners, by Rob Cowan, Copyright Year 2021, Published by Routledge
 2. Restorative Cities urban design for mental health and wellbeing by Jenny Roe, Layla McCay, 2021, Bloomsbury Publishing Urban Design-A Typology of Procedures and Products by Jon Lang, 2017, Routledge
 3. Beyond Mobility: Planning Cities for People and Places by Robert Cervero, Erick Guerra, Stefan Al, 2017, Island Press Washington, DC
 4. Urban Design – Street and Square by Cliff Moughtin, 2003, Routledge
 5. The Ecology of Urban Habitats by O. L. Gilbert, 1989, Wiley Publications

MHD22R5105	SMART CITY PLANNING	L	T	S	X	C
		2	0	0	3	3

OBJECTIVE:
 To introduce the students about upcoming challenges in the urban planning process and resulting environments in par with the technology changes and urban systems

UNIT 1:	SMART CITIES – INTRODUCTION	9
----------------	------------------------------------	----------

City Smartness: the Energy Dimension of the Urban System - Urban Performance and Energy - Energy and Spatial Planning- Integrated Approaches- Technological Change and Innovation for Sustainable Cities. Ontological Approaches

UNIT 2:	SMART ENERGY	9
----------------	---------------------	----------

Energy supply -Thermodynamics - New Paradigm of Sustainability in Planning Science and Practice Parking Planning and energy saving – Measurement index of Sustainability -Urban Transformation. The Landscape Assessment and New Energy Facilities

UNIT 3:	TERRITORIAL POLICIES	9
----------------	-----------------------------	----------

Integrated Approach -Territorial Policies- Urban Energy Saving strategies- Planning for the Conservation of Historic Districts-Cities Dealing with Energy Issues and Climate-Related Impacts- Approaches, Strategies and Tools for a Sustainable Urban Development

UNIT 4:	REGIONAL LOCAL DEVELOPMENT STRATEGIES	9
----------------	--	----------

Evolved Frameworks for the Integrated Development of Territorial Services - Role of Energy and Climate Change Polices -Selected Examples from a Spatial Planning Perspective - Regional Local Development Strategies Benefiting from Open Data

UNIT 5:	SMART CITIES: CONTEXT, POLICY, AND GOVERNMENT	9
----------------	--	----------

Renewable Energy Sources and their Contribution-Mobility Projects and Practices-Geodesign - Regulations issues - Using Citizen-Provided Information to Build Purposeful Knowledge for Planning: Principles, Requirements, Examples

TOTAL: 45 PERIODS

REFERENCE:

1. Smart city guidelines Govt. of India,2021, Ministry of Urban Development Government of India 2. Low-Carbon Smart Cities: Tools for Climate Resilience Planning by Kwi-Gon Kim,2018, Published by Springer 3. Smart Energy in the Smart City, by Papa, Rocco, Fistola, Romano (Eds.),2016, Springer International Publishing 4. Smart cities mission: Ministry of Housing and urban affairs, Government of India						
MHD22R5106	HEALTHY HABITATS	L	T	S	X	C
		2	0	0	3	3
OBJECTIVE: To introduce the students to the concept of quality and Healthy environments and urban planning and design process involved to ensure healthy habitats for its citizen.						
UNIT I	INTRODUCTION – HEALTH AND CITY PLANNING	9				
Urban form and health- Design and public realm- Health, people friendly environment -Health and urban context. The Links Between Health and City Planning						
UNIT II	COMMUNITY DESIGN AND HEALTH	9				
Social and economic environment-Community design- air quality- Social Capital- social inclusion-Community Design for Physical Activity- conducive environment. Transportation and Land Use.						
UNIT III	BUILT ENVIRONMENTS AND HEALING	9				
Healthy Workplaces- Open space and green infrastructure- Design considerations. Health Impact Assessment - Tools for measurement.						
UNIT IV	STRATEGIES FOR HEALTHY PLACES	9				
Behavioral Choices and the Built Environment- Community Engagement- assessment Sanitation: water and waste- E-waste- management.						
UNIT V	THE HEALTHY CITIES PROJECT & URBAN PLANNING	9				
Healthy Urban Planning in Practice- Experiences of Cities in the Healthy Cities Movement. Guidelines for Healthy Urban Planning. Role of W.H.O- Natural and built environment interventions and case studies from developing nations.						
TOTAL: 45 PERIODS						
REFERENCE: 1. 1st Edition, The Routledge Handbook of Planning for Health and Well-Being, Shaping a sustainable and healthy future, Edited By Hugh Barton, Susan Thompson, Sarah Burgess, Marcus Grant, Copyright Year 2015 2. Making Healthy Places, Designing and Building for Health, Well-being, and Sustainability by Andrew L. Dannenberg, Howard Frumkin, Richard J. Jackson, Copyright Year 2011, Island Press Washington, DC 3. Toward the healthy city, People, Places, and the Politics of Urban Planning by Jason Corburn, Copyright Year 2009, MIT Press 4. 1st Edition, Healthy Urban Planning, by Hugh Barton, Catherine Tsourou, Copyright Year 2000 by Routledge						
MHD22R5107	ELECTIVE I: HABITATS OF FUTURE	L	T	S	X	C
		2	0	0	3	3
OBJECTIVE: To sensitize on the alternative scenarios available and possible for sustainable habitats of future						
UNIT1:	EVOLUTION OF URBAN SETTLEMENTS	10				
Evolution of urban settlements, economic systems, political power structure and city formations. Industrial revolution and urbanization. Contemporary cities - New urbanism, Infrastructuralism, Everyday urbanism, Adhoc urbanism as futures. Cities within cities						
UNIT2:	NEW TECHNOLOGIES AND CITY FORM	10				
Wired cities globalized cities and controlled districts, pricing, exclusion and information highway and the breakdown of National boundaries. Neo nomadism. Search for identities by globalized communities and neo classicism, vernacular architecture and regionalism						
UNIT3:	IDENTITY AND BREAKDOWN	10				
Future as the future of people - parallels in human development and urban development-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						
UNIT4:	CASE STUDIES AND SEMINARS	15				
Case studies and seminars on future city proposals, utopian ideas and emerging perspectives on energy-form-new territorial concepts, upcoming challenges and issues in the new planning models-Industrial practice -Role of educational Institutions- citizen awareness and inclusivity						
TOTAL: 45 PERIODS						
SUGGESTED SEMINAR TOPICS/TERM PAPERS:						

Future trends and examples. Each student shall select topics within the area of syllabus and present two term papers as seminar

REFERENCE:

1. World Cities Report, 2022, UN Habitat
2. Self sufficient city: envisioning the habitat of the future : 3rd advanced architecture contest, Lucas Cappelli, Vicente Guallart, Institut d'Arquitectura Avançada de Catalunya, Copyright Year 2010, Published by Actar : IaaC, Barcelona, Spain
3. Network Cities by Christopher Alexander, 1977, Oxford University Press
4. 1st Edition, Emerging Concepts in Urban Space Design, by Professor Geoffrey Broadbent, Geoffrey Broadbent, Copyright Year 1995

MHD22R5108	PROGRAMMING FOR URBAN ANALYTICS	L	T	S	X	C
		2	0	0	3	3

OBJECTIVE:

- Familiarize students with different types of urban data sources, file and database types used for storage of such data.
- Discuss the origins and associated limitations of various urban data sources.
- Showcase the practices of explanatory data visualization in urban planning and research.
- Explain the importance of time and space dimensions of urban data and how the data is stored and structured.
- Develop basic skills of applying statistical analysis to large and small data sets and Tech basic principles of exploratory data analysis.
- Show how to communicate urban data analysis results through explanatory data visualization

UNIT I	INTRODUCTION TO SMART CITIES AND URBAN DATA	9
---------------	--	----------

Smart city as a concept, as a hype, as a marketing phenomenon, as one of the key causes of emergence of urban data. City as a corporation vs. city as a living organism. Adaptation of the city to new technologies. - Automated data generation and collection. Urban data ubiquity. The origins of urban data. Urban data sources. Traditional urban data (state urban statistics) vs. new data sources. - Urban data analysis as part of daily routines of urban dwellers, geo-marketing specialists and tech companies. Outcomes of data ubiquity for urban researchers, planners, and managers. - Required skill sets for urban data analyst.

UNIT II	INTRODUCTION TO SCRIPTED DATA ANALYSIS AND REPRODUCIBLE RESEARCH	9
----------------	---	----------

- Introduction to scripted data analysis. Point-and-click analysis vs. scripted analysis: head-to-head comparison. Using GUI (graphical user interface) dialog windows vs. calling functions. Importance of reproducible research with motivating examples. - R language as a statistical command line analysis tool. R language as a programming language. Why R. Comparison of R, Python, Julia, and a few other tools. - Basics of RStudio IDE (Integrated Development Environment). Working with RStudio projects. - Reproducible research using R, R Markdown, R Markdown Notebooks, flexdashboard. - Basic plotting in R. Basic functions and routines applied to classic datasets (mtcars, cars, iris, etc.). Basic data import.

UNIT III	DATA VISUALISATION AND EXPLORATORY DATA ANALYSIS	9
-----------------	---	----------

Storytelling with data. Exploratory vs explanatory analysis. Choosing effective visuals for explanatory analysis. Gestalt principles of visual perception. Spotting bad graphs and maps. - Exploratory data analysis (EDA) process and tools. Plots vs summary statistics. - Rorschach protocol. Line-up protocol. - R tools for Exploratory data analysis. Advanced plotting using ggplot2 and associated tools. - Interactive plots in R, the simple way. - Plot design layer by layer. Plot customisation according to Gestalt principles of visual perception. Plot optimisation for colour blind accessibility.

UNIT IV	URBAN DATA TYPES AND SOURCES-GETTING ACCESS TO DATA	9
----------------	--	----------

- Data sources. Open data. Code books. Means of accessing the data. Working with multiple data sources. Data storage file formats. Databases. Getting data from databases. Intro to getting data from web sources using APIs. - Basic types of data, operators, commands, functions. Approaches to working with data using R. Basic data structures. Objects. - R object types: vectors, matrices, "data.frames", "tibbles" and "data.tables". Lists. Differences between object types and use cases. - Exporting data to various formats. Choice of storage file format depending on storage goals. - Basic data manipulation using "data.table" and "dplyr". Data Cleaning and Transformation

UNIT V	SPATIAL DATA ANALYSIS AND STATISTICS	9
---------------	---	----------

Basics of working with spatial data in R. Spatial data storage formats and object types. Importing spatial data from various sources. - Visualising spatial data in R. Static plotting of spatial data. Interactive maps. - Merging and joining spatial data. Spatial data analysis. Geometric operations. - Introduction to spatial statistics. Spatial

autocorrelation. Spatial segregation. Spatial generalised linear models						
TOTAL: 45 PERIODS						
REFERENCE:						
1. ggplot2: elegant graphics for data analysis by Hadley Wickham, Danielle Navarro, and Thomas Lin Pedersen, 2016, Springer International Publishing						
2. Automated Data Collection with R: A Practical Guide to Web Scraping and Text Mining by Simon Munzert, Christian Rubba, Peter Meißner, Dominic Nyhuis Copyright Year 2015, Published by Wiley						
3. Beginning R: An Introduction to Statistical Programming, Larry Pace, Joshua Wiley, 2015, Published by Apress						
4. A Primer for Spatial Econometrics With Applications in R by Giuseppe Arbia, Copyright Year, 2014, Published by Palgrave Macmillan						
5. Statistical Methods for Environmental Epidemiology with R: A Case Study in Air Pollution and Health by Roger D. Peng and Francesca Dominici, 2008, Springer New York, NY						
MHD22R5202	ECOLOGY AND SUSTAINABLE HABITAT SYSTEMS	L	T	S	X	C
		3	0	0	0	3
OBJECTIVE:						
<ul style="list-style-type: none"> Sustainability of cities and the related EIA have become important issues that guide urban development. This course is designed to expose the student to the concerned issues so as to interact effectively with the environmental planner. 						
UNIT I	SUSTAINABLE SETTLEMENTS	9				
Concepts of settlement ecology. Settlements as habitat systems of interconnected man made and natural systems. Introduction to concepts of Sustainability. Nature as the primary layer - urban development as the secondary layer. What makes today's cities unsustainable? Nature, built heritage and community networks. Cities as centers of consumption of land, water, energy resources and forest cover.						
UNIT II	ECOLOGY OF AN URBAN ECOSYSTEM & BIODIVERSITY	9				
Various aspects of ecology, Components of urban ecosystem, structure and function of ecosystem, energy flow and mineral cycling, spatial heterogeneity. Urbanization, population density and impact on ecosystem, Industrial melanism, sustainable development-concept and strategies.						
UNIT III	HABITAT IMBALANCE	9				
Ecological footprints, energy and resource depletion connected to development, pollution of soil, water, air and noise and visual pollutions. Biodiversity-changes and management approaches. Destruction of food chains. Issues of public health and sustainability. Need to reduce consumption. Circular metabolism and linear metabolism. Concepts of equity. Slums as an issue of sustainability.						
UNIT IV	NEW TECHNOLOGIES IN PLANNING	9				
Global prospects towards environmental ethics and sustainable development. Impact of technologies on sustainability I.T. and Biotechnology, Energy research and control of water. Role of EIA in the planning process. Definitions and need, evolution and objectives, tasks & scope. Methods of EIA advantages and limitations.						
UNIT V	ENVIRONMENT IMPACT ASSESSMENT	9				
Assessment of impacts on resources and land use. Assessment of social and health impacts. Public participation. Legal framework for EIA. International and national agencies and pressure groups for environmental and social assessment.						
TOTAL: 45 PERIODS						
SUGGESTED SEMINAR TOPICS/ TERM PAPERS:						
Water augmentation, Rain water harvesting, waste and wastewater recycling, reuse, and renewal of habitat resources. Literature Case Studies: Preparation of EIA for developmental projects- Factors to be considered in making assessment decisions, Water Resources Project, Pharmaceutical industry, thermal plant, Nuclear fuel complex, Highway project, Sewage treatment plant, Municipal Solid waste processing plant, Airports.						

REFERENCE:

1. Urban Ecology: An Introduction by Ian Douglas & Philip James, Copyright year 2015, Published by Routledge
2. Design with Climate: Bioclimatic Approach to Architectural Regionalism - New and expanded Edition by Victor Olgyay, 2015, Princeton University Press
3. Advances in Urban Ecology: Integrating Humans and Ecological Processes in Urban Eco systems, by Marina Alberti, Copyright Year 2008, Springer New York, NY
4. Sustainable Architecture and Urbanism: Concepts, Technologies, Examples by Dominique Gauzin-Müller, 2002, Published by Birkhäuser Basel
5. Environment Impact Assessment by B.R.Barthwal, Copyright year 2002, New Age International(P) Publishers
6. Urban design in different climates by B. Givoni, World Meteorological Organization, WMO, Published by WMO, Geneva, 1989
7. Sustainability Indicators in Urban Planning Evaluation, by P. L. Lombardi, Copyright Year 1998, Published by Springer Nature B.V.
8. Urban Energy System by B.Sudhakara Reddy, Copyright year 1998, Published by Concept Publishing Co

MHD22R5282	HABITAT DESIGN STUDIO – II	L	T	S	X	C
		0	0	6	6	8

OBJECTIVE:

The objective of this studio is to sensitize and introduce students to inner city regeneration.

OUTLINE:

Study and Design of development /redevelopment/intervention in an existing urban district of a large city. The studio exercises would examine issues of inner-city regeneration and interventions through economic, environmental, urban conservation, participatory and infrastructure provision-led objectives. The project definition, Programme development, design and development process, and implementation framework to form integral part of the project structuring. Direct involvement of user groups and decision-making agencies as part of the project to target appropriate development strategies. Feedback and interactive sessions to achieve workable economic and environmental regeneration objectives. Finally to diagnose implications of suggested interventions on the larger urban fabric, to re-examine values in terms of social, physical, and the progressive nature of change. Study should include model making and virtual models and use of graphics to highlight layers of interactive spaces and networks. Studio exercises may be carried out in groups and interventions to be submitted individually. Submissions shall be in the form of drawings and Report.

TOTAL: 220 PERIODS**SUGGESTED SEMINAR TOPICS/ TERM PAPERS:**

Understanding Residential layouts, in terms of patterns, housing densities, and utility network and community facilities. Slums and squatters settlements - problems and possibilities.

REFERENCE:

1. Design in Architecture: Architecture and the Human Sciences by Geoffrey Broadbent, Copyright Year 1973, Published by John Wiley & Sons
2. Land Development Handbook: Planning, Engineering, and Surveying, Third Edition, by Sidney O. Dewberry, Copyright year 2008, Published by New York : McGraw-Hill
3. Urban Design: Green Dimensions by Cliff Moughtin, Peter Shirley, Copyright year 2016 by Routledge

MHD22R5203	ELECTIVE II : GIS MODELLING IN URBAN PLANNING	L	T	S	X	C
		3	0	0	0	3

OBJECTIVE:

To examine the role and application of Geographic Information Systems in environmental design, community charities and other urban design projects

UNIT I	INTRODUCTION	6
GIS – Spatial data, non-Spatial data, Plan, Map, Scale, Map Projection, GPS, GCP collection, Spectral signature curve, Image processing – Geo coding / Geo referencing, GIS software, Two tier architecture, Three tier architecture, Thin client, Thick client - Objectives and functions of GIS models in urban and regional planning.		
UNIT II	DATABASE CONCEPTS	9
Data structures, Databases, Files, Types of Tables, Table operations, Creating a Table, Accessing Records in a Table, Manipulating records in a Table, Modifying Table structure, Reports, Advantages of database, Primary key and data access, Composite primary key, Defining a primary key, Sorting, Indexing, Master Detail relationships, Types of relationships, Foreign key, Deleting, updating and adding records to linked tables, ER Diagram, Data Model – Physical, logical and conceptual.		
UNIT III	SPATIAL DATA	9
Comparative methods for obtaining images, Aerial Photograph, Satellite Imagery – High resolution imagery – LISS,		

PAN, MSS – Ortho rectification, Digitization – Layers, Digital Elevation model, Digital Terrain Modelling, Existing maps – Problems and Issues, Rubber sheeting, Digitization, overlay, union, intersection.

UNIT IV	INTRODUCTION TO GIS SOFTWARE	9
----------------	-------------------------------------	----------

Arc Info – Coverage – Arc, Node, Tics, Add, get, put, Map extent, edit, Topology creation – Clean, Build, Tables – Creating tables, updating tables, join, drop item, Export, Import, overlay, union, intersection, buffer - Overlay analysis, Buffering, Query, Spatial analysis / 3D analysis Introduction software, Application of GIS

UNIT V	MODELLING GIS PROJECTS FOR URBAN AREAS	12
---------------	---	-----------

Preparation of Land use map, Land use suitability analysis, Screen design, Visual Basic application using Map objects - Digital representation of geographic data, digitization of features

TOTAL: 45 PERIODS

REFERENCE:

1. 4th Edition, Thematic Cartography and Geovisualization, Fourth Edition, by Terry A. Slocum, Robert B. McMaster, Fritz C. Kessler, Hugh H. Howard
2. Copyright Year 2023, Published by Routledge
3. Fundamentals Of Database Systems Sixth Edition, by Ramez Elmasri, Shamkant B. Navathe, Copyright year 2011, Published by Pearson Education, Inc
4. Modeling Our World: The ESRI Guide to Geodatabase Concepts by Michael Zeiler, Jonathan Murphy, 2010, Published by ESRI Press
5. Introduction to Geographic Information Systems by Kang-Tsung Chang, Copyright year 2008, Published by McGraw-Hill
6. Understanding GIS: The ARC/INFO Method, by ESRI, Copyright year 2004, Published by Environmental Systems Research Institute Inc., U.S.

MHD22R5204	HOUSING AND COMMUNITY	L	T	S	X	C
		2	0	0	3	3

OBJECTIVE:

- To understand the role of housing and its importance in habitat design.
- To explore the policy aspects and finance mechanism in housing

UNIT1:	HOUSING CONCEPTS	9
---------------	-------------------------	----------

Housing concepts, definitions and components of housing. Role of housing in socio-economic development of the nation, housing in relation to non-residential components of settlement

UNIT2:	HOUSING NORMS AND STANDARDS	9
---------------	------------------------------------	----------

Housing norms and standards. Housing stress diagrams, stressed communities. Social impacts of planned housing. Role Of NGOs and self-help groups. Sustainability of social and public housing – planning, design, Materials, Technology.

UNIT3:	ROLE OF GOVERNMENT	9
---------------	---------------------------	----------

The role of government as a developer, financier and policy maker to be critically assessed in the era of privatization in housing sector. Housing scenario in India, National Housing policy, Role of HUDCO, State Housing Boards.

UNIT4:	FINANCE MECHANISM	9
---------------	--------------------------	----------

Housing Finance- Role of NHB and other financial Institutions. Mechanisms for housing loans for various income groups & industry. Role of private sector in housing infrastructure development.

UNIT5:	GLOBALIZATION AND HOUSING	9
---------------	----------------------------------	----------

Impact of globalization. Effect of global capital participation in housing and urban infrastructure sector with case studies from selected areas of global housing research

TOTAL: 45 PERIODS

SUGGESTED SEMINAR TOPICS/ TERM PAPERS:

Evaluation of Housing policies of different countries/ states Scope and Role of Various Agencies

REFERENCE:

1. 1st Edition Home and Community: Lessons from a Modernist Housing Scheme, by Sandra Costa Santos, Nadia Bertolino, Stephen Hicks, Camilla Lewis, Vanessa May, Copyright Year 2018, Published by Routledge
2. 1st Edition Housing Regeneration: A Plan for Implementation by V. Charles Ward, Copyright Year 2018, Published by Routledge
3. 1st Edition, Holding Their Ground, Secure Land Tenure for the Urban Poor in Developing Countries by Alain Durand-Lasserve, Lauren Royston, Copyright Year 2002, Published by Routledge
4. Housing Laws in India Problems and Remedies, by P.K. Sarkar, Copyright year 2000, Published by Eastern Law House (P) Ltd

5. 1st Edition, Housing and Finance in Developing Countries, by Kavita Datta, Gareth Jones, Copyright Year 1998, Published by Routledge						
6. Housing and Urbanisation: A Study of India by Cedric D. J. Pugh, Copyright year 1990, Published by Sage Publications Pvt. Ltd						
MHD22R5205	HERITAGE HABITATS: CONSERVATION AND RENEWAL	L	T	S	X	C
		2	0	0	3	3
OBJECTIVE: 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.						
UNIT I	INTRODUCTION TO CONSERVATION	10				
Interactive session of History heritage and cities, Understanding Heritage-Types of Heritage- Heritage conservation: Need, Debate and purpose- Defining Conservation, Preservation and Adaptive reuse- Distinction between Architectural and Urban Conservation- International agencies like ICCROM, UNESCO and their role in Conservation.						
UNIT II	CONSERVATION ACTS	10				
Socio-economic development, tourism infrastructure development, and role of urban conservation. Institutional Aspects of Conservation - Charters - World Heritage legislation and Sites. Establishment, goals & objectives of Archaeological Survey of India (ASI) - Role and activities of ASI Role of INTACH – Formation, Scope and Principles – Administrative Form -INTACH Charter Central & State Government policies on heritage Conservation - Legislations and legal interventions in Conservation						
UNIT III	RENOVATION, REGENERATION & REUSE	10				
Conservation Area practice, adaptive reuse, upgradation programs in old areas, infill design. Financial and Implementation framework for urban conservation and Adaptive Reuse Projects. Urban recycling and brown field projects, urban renewal, and development strategies for regeneration of inner cities areas.						
UNIT IV	URBAN CONSERVATION & MANAGEMENT	15				
Conservation management, community participation, economic regeneration, upgrading infrastructure, financing and implementation framework for redevelopment and revitalization projects. Legislation frameworks and institutional framework for special areas, urban conservation, and urban recycling. Over view of urban history of India and Tamil Nadu – understanding the character and issues of historic cities – select case studies of sites like Thanjavur, Kumbakonam, Kanchipuram, Chettinaad – historic districts and heritage precincts. Recent successful practices in urban conservation and regeneration in India and other countries. Urban conservation and heritage tourism.						
TOTAL: 45 PERIODS						
SUGGESTED SEMINAR TOPICS/ TERM PAPERS: Case studies of adaptive reuse and Inner-City revitalization						
REFERENCE: 1. 1st Edition, Values in Cities: Urban Heritage in Twentieth-Century Australia by James Lesh, Copyright Year 2022, Published by Routledge 2. Urban Emotions and the Making of the City: Interdisciplinary Perspectives, 1st Edition, by Katie Barclay, Jade Riddle, Copyright year 2021, Published by Routledge 3. 1st Edition, Routledge Companion to Global Heritage Conservation, by Vinayak Bharne, Trudi Sandmeier, Copyright year 2019, Published by Routledge 4. Conservation briefs: Identification and Documentation of Built heritage in India, by Divay Gupta, Copyright year 2007, Published by Rajika Press Services Pvt. Ltd. 5. 3rd Edition, Conservation of Historic Buildings, by Bernard Feilden, Copyright Year 2003, Published by Routledge 6. Herat, the Islamic city : a study in urban conservation, by Abdul Wasay Najimi, Copyright year 1998, Published by Curzon, London 7. Conservation and Planning by Alan Dobby, Copyright year 1984 , Published by Hutchinson Radius						
MHD22R5206	SEMINAR: DISSERTATION	L	T	S	X	C
		3	0	0	0	3
OBJECTIVE: Seminar is a course patterned on the self study mode wherein a student studies a habitat in a holistic approach based						

on a selected case study from their own area of interest.

OUTLINE:

The intent of the seminars is to explore the complex nature of a 'successful' habitat that attempts to identify and evaluate examples of Habitat design process that are followed by the experts in the industry, anticipating the future. The seminar will deal with the key trends that will shape the future form and function of cities, and about the changes that would influence the role of a designer After this study, the students will be able to identify the working process of these habitats and the process of habitat formation from both physical and social perspectives.

TOTAL: 280 PERIODS

REFERENCE:

1. Critical Reading and Writing for Postgraduates, Fourth Edition, by Mike Wallace and Alison Wray, Copyright Year 2021, Published by SAGE
2. Mastering Academic Writing, First Edition, by Boba Samuels and Jordana Garbati, Copy right year 2018, Published by SAGE Publications Ltd
3. Qualitative Dissertation Methodology : A Guide for Research Design and Methods by Nathan Durdella, Copyright year 2018, Published by SAGE Publications, Inc
4. 3rd Edition, The Dissertation, A Guide for Architecture Students, Copyright Year 2014, by Iain Borden, Katerina Rüedi Ray, Published by Routledge
5. The Dissertation Journey: A Practical and Comprehensive Guide to Planning, Writing, and Defending your Dissertation, Copyright year 2010, by Carol M. Roberts, Published by Corwin Press

MHD22R5301	INFRASTRUCTURE PLANNING AND MANAGEMENT	L	T	S	X	C
		3	0	0	0	3

OBJECTIVE:

To develop an insight amongst the students on, urban infrastructure development & management and its impact on qualitative and quantitative aspects of urban built environment.

UNIT I	INFRASTRUCTURE PLANNING	10
---------------	--------------------------------	-----------

Concepts in urban infrastructure- Social and physical infrastructure
 Urban social infrastructure - qualitative and quantitative techniques of assessing requirements, Planning Amenities, and institutions. Urban physical infrastructure with emphasis on Water supply, sewerage, Solid waste, Storm water. Union Budget 2021-22 & Government initiatives, Current opportunities

UNIT II	FUNDING AGENCIES FOR INFRASTRUCTURE DEVELOPMENT	10
----------------	--	-----------

Public and private sector role in resource mobilization and infrastructure development and related issues. Financing systems, sources of finance, leasing and contracting methods, pricing and financing, major National and international agencies involved in infrastructure provisions. World Bank, Asian Development Bank, European Development Bank, IBRD, IFC

UNIT III	INFRASTRUCTURE MANAGEMENT STRATEGIES	10
-----------------	---	-----------

Introduction to urban management. Evolution and structure of urban development bodies. Concepts of decentralization of development and management. Managing Infrastructure development, corporatization and related goals, decentralized and people led infrastructure provisions, social goals and equity, environmental and economic issues and assessments etc. related to physical infrastructure.

UNIT IV	NEW METHODOLOGIES IN INFRASTRUCTURE MANAGEMENT	15
----------------	---	-----------

Quality control mechanisms, institutions and instruments of resource mobilization, lessons from success and failure, new opportunities and initiative in infrastructure development and management. Case studies from Asian cities of successful and innovative infrastructure provisions, and equitable economic development, management, and maintenance schemes. National Housing Policy

TOTAL: 45 PERIODS

SUGGESTED SEMINAR TOPICS/ TERM PAPERS:

Case Studies and best practices in India and abroad

REFERENCE:

1. 1st Edition, Nurturing Mobilities, Family Travel in the 21st Century, by Claire Maxwell, Miri Yemini, Katrine Mygind Bach, Copyright Year 2022, Published by by Routledge
2. 1st Edition, Shaping Urban Infrastructures, Intermediaries and the Governance of Socio-Technical Networks, by Simon Guy, Simon Marvin, Will Medd, Timothy Moss, Copyright Year 2011, Published by Routledge

3. 1st Edition, Urban Transport Environment and Equity, The Case for Developing Countries, by Eduardo Alcantara Vasconcellos, Copyright Year 2001, Published by Routledge
4. Principles of Urban Transport Planning, by B.G. Hutchinson, Copyright year 1974, Published by McGraw-Hill Inc., US

MHD22R5302	RESEARCH METHODS	L	T	S	X	C
		3	0	0	0	3

OBJECTIVE:

- To introduce the students to the meaning, concepts and methods of Research.
- To aid the students in adopting skills in writing Technical papers and help in conducting research.

UNIT 1:	SCIENTIFIC RESEARCH	10
----------------	----------------------------	-----------

Types and Methods- Science & Common sense, Empirical research, Normative research - Aims, steps, types and methods of Scientific Research Concepts, Constructs and Variables-Hypotheses Construction, nature, types of Hypothesis, Difference between Proposition, Hypothesis and Theory-Testing Hypothesis, Research Design

UNIT 2:	RESEARCH FORMULATION	10
----------------	-----------------------------	-----------

Formulation of research problem and Questions-Meaning, Goals, Characteristics of Research Design-Design for different types of Research, Cross-sectional, Trend, Cohort and Panel Studies-Sampling-Purposes, Principles, Advantages, Types, Sample size-Techniques of Data Collection

Unit 3:	RESEARCH QUESTIONNAIRE	10
----------------	-------------------------------	-----------

Questionnaire and Interview Schedule-Meaning, Format, Formulation, Types, Pre- testing, Advantages,-Limitations, Interview: Functions, Characteristics, Types, Conditions of successful Interview, The Interviewer & the Respondent, Process of Interviewing, Merits & Limitations Observation: Characteristics, Purpose, Types, Process, The Observer, Problems, Advantages, Limitations,-Recording of Observations, Schedule

Unit 4:	CASE STUDY	15
----------------	-------------------	-----------

Case Study Purpose, Types, Sources of data Collection, Advantages, Criticisms Data processing and Analysis-Tabulation, Diagrammatic Representations and Analysis, Measurement and Scaling Techniques-Statistical Techniques: Measures, Mean, Median, Mode writing a Research Paper-Scientific Writing, Format: Preliminaries, Text, References & Conclusion-Research Ethics

TOTAL: 45 PERIODS

REFERENCE:

1. Introduction to Research Methods: A Hands-on Approach, Second Edition, by Bora Pajo, Copyright year 2022, Published by SAGE Publications, Inc
2. Research Methods: The Basics, by Nicholas Walliman, 3rd Edition, Copyright Year 2022, Published by Routledge
3. 2nd Edition, Research Methods: The Key Concepts, by Michael Hammond, Jerry Wellington, Copyright Year 2021, Published by Routledge
4. Research Methodology: Methods and Techniques, Fourth edition, Copyright year 2020, Published by New Age International (P) Limited, Publishers
5. Research Design: Qualitative, Quantitative, and Mixed Methods Approaches, 5th Edition, by John W. Creswell and J. David Creswell, Copyright year 2017, Published by SAGE Publications, Inc

MHD22R5383	HABITAT DESIGNSTUDIO III	L	T	S	X	C
		0	0	6	9	9

OBJECTIVE:

- Students will use Internet and library resources provided to develop a thorough understanding of the facilities and standards required in the design problem.
- Students will understand the problems associated with the environment.

DESIGN PROJECT:

PLANNING AND DESIGN FOR TOURISM IN ENVIRONMENTALLY SENSITIVE AREAS

Hill and coastal areas are environmentally fragile due to their location, topography, and natural vegetation. They are especially vulnerable in our country where the population density is very high and the environmental bye laws are not stringent. Environmental analysis of such areas and their development for tourism requires inter disciplinary approach involving remote sensing, Geographical information systems, environmental modelling techniques, ecological sustainability and socio economic factors. Scholars will be encouraged to conduct case studies of such environmentally susceptible hill / coastal areas and analyze the same using Satellite imagery, GIS software, environmental modelling techniques and field surveys. Moreover analysis of these areas for tourism development

and land suitability will be carried out in order to develop a broad framework for planning and development. Students would be encouraged to investigate the special building rules and byelaws prevalent for hill / coastal areas from an ecological perspective. Both hill & coastal areas are rich in resources such as scenic areas, views and vistas. Hence while planning for the optimized development of these areas scholars have to consider the visual impact assessment as an integral part of environmental impact assessment, so as to conserve hill sites and coast. It can be inferred that this exercise would advocate a balanced approach between conservation, sustainability & development.

TOTAL: 220 PERIODS

REFERENCE:

1. 1st Edition, Biological Assessment of Natural and Anthropogenic Ecosystems: Trends in Diagnosis of Environmental Stress by Eugene M. Lisitsyn, Larissa I. Weisfeld, Anatoly I. Opalko, Copyright Year 2022, Published by Routledge
2. 1st Edition, Sustainable Coastal Design and Planning, by Elizabeth Mossop, Copyright Year 2019, Published by Routledge
3. 1st Edition, Urban Biodiversity: From Research to Practice, by Alessandro Ossola, Jari Niemelä, Copyright Year 2018, Published by Routledge
4. 1st Edition, Revising Green Infrastructure: Concepts Between Nature and Design, by Daniel Czechowski, Thomas Hauck, Georg Hausladen, Copyright Year 2015, Published by Routledge
5. The Ecological Design and Planning Reader, Copyright year 2014, Published by Island Press Washington, DC 2nd Edition, Coastal Planning and Management, by Robert Kay, Jaqueline Alder, Copyright Year 2005, Published by Routledge

MHD22R5303	URBAN DEVELOPMENT AND ENVIRONMENTAL LAWS	L	T	S	X	C
		2	0	0	3	3

OBJECTIVES:

To familiarize the student with legal terminology and legal frameworks that applies in urban context of Environmental Protection

UNIT1:	FUNDAMENTALS OF ENVIRONMENTAL LAWS	9
---------------	---	----------

Introduction to laws, concepts – sources of law, meanings terms of law, legislation, ordinance, bill, act, regulations and bye – laws

UNIT2:	EVOLUTION OF PLANNING LEGISLATION IN INDIA	9
---------------	---	----------

An overview of legal tools connected with urban planning & development, Town and Country Planning, Improvement Trust and Development Authorities etc

UNIT3:	REGIONAL PLANNING LEGISLATION	9
---------------	--------------------------------------	----------

Objectives, contents and procedures for preparation and implementation of Regional plans, development plans, Town Planning Schemes, Area Plans etc. Legislation related to use and control of land, land acquisition

UNIT4:	LAND DEVELOPMENT LEGISLATION	9
---------------	-------------------------------------	----------

Significance of land development control – objectives and legal tools, critical evaluation of Zoning, sub division regulations, building regulations and byelaws. Development code Legislation on Conservation of natural resources including Mining and Forestry Acts, Conservation and Management of Ancient Monuments and Archaeological sites and ruins.

UNIT5:	COSTAL ZONE REGULATIONS	9
---------------	--------------------------------	----------

Coastal Zone Regulations, Transfer Development Rights – Concepts and related issues Environment Management Systems (ISO – 14001 and its planning implications, Need of ISO, case study of ISO certified industry, Environmental and Financial Benefits of ISO

TOTAL: 45 PERIODS

SUGGESTED SEMINAR TOPICS/TERM PAPERS:

Environment versus Development – Approaches and Analysis. Energy conservation issues and need of Energy Audit and related topics

REFERENCE:

1. Development of Environmental Laws in India, by Kanchi Kohli and Manju Menon, Copyright year 2022, Published by Cambridge University Press
2. 3rd Edition, Environmental Law and Policy in India: Cases, Materials, and Statutes, by Shyam Divan, Armin Rosencranz, Copyright year 2022, Published by Oxford University Press, USA
3. Legal Design for Social-Ecological Resilience, by Brita Bohman, Copyright year 2021, Published by Cambridge University Press
4. National Building Code of India 2016 (Volume 1)URDPFI Guidelines - Ministry of Housing and Urban Affairs.
5. The Tamil Nādu town and country planning act, 1971

MHD22R5201	PLANNING LEGISLATION	L	T	S	X	C
-------------------	-----------------------------	----------	----------	----------	----------	----------

		3	0	0	0	3
OBJECTIVE:						
To familiarize the student with regulatory approaches involved in Planning, Constitutional Law, acts and legal frameworks, amendments that applies for deriving Master plan and various Town Planning schemes.						
UNIT 1:	PLANNING LEGISLATION:	9				
General Concept of Law: Source of law (i.e. custom. legislation and precedent), meaning of terms of law, legislation, ordinance, Bill, Act, Regulations and Bye-laws. Significance of law and its relationship to urban planning benefit of statutory provisions- eminent domain & police powers						
UNIT 2:	INDIAN CONSTITUTION:	9				
Concept and contents, provisions, regarding property rights, Legislative Competence of staff and central Government to enact town planning legislation. - Evolution of Planning legislation. An over view of legal tools connected with Urban Planning and Development, Town and Country Planning Act, Improvement Trusts Act, Urban Planning and Development Authorities Act - objectives, content, procedures for preparation and implementation of regional plans, Master Plans and Town Planning schemes.						
UNIT 3:	PLANNING LEGISLATION –ACTS AND AMENDMENTS:	9				
Concept of Arbitration; Betterment levy; development charges and public participation in Statutory planning process; Concepts of Structure Plan; local plan/and action plan under the English law.						
UNIT 4:	ENVIRONMENTAL LAWS	9				
Environment Protection Act 1986- Land Acquisition Act 1884 - Basic concept, procedure for compulsory acquisition of property and determination of compensation- Urban land (Ceiling and Regulation) ACL 1976 – objectives, contents and planning implications-Significance of Land Development Control – objectives, contents and legal tools, critical evolution of zoning, sub- division regulations, building regulations and bye-laws, Development Code, Zoning law and law relating to periphery control 73th and 74 th Constitutional Amendment Act, 1992.						
UNIT 5:	CASE STUDIES	9				
Relevant case studies of the above regarding EP Act 1986, Air (Prevention and Control of pollution) Act, Water (Prevention and Control of pollution) Act, Mines and Mineral Act, Factories Act, Pesticides Act, Indian Forest Act, Wildlife Act, Ancient Monuments and Archaeological Sites and Remains Act, Hazardous Waste Management and Handling Rules / Biomedical Rules / Solid Waste Management Rules, Environment Tribunal Act, Climate change Protocols and Conventions, MOEF Guidelines and Notifications, Appellate Authority Act, Other related Notifications on environmental safety						
TOTAL: 45 PERIODS						
REFERENCE:						
1. 1st Edition, City Planning in India, 1947–2017, by Ashok Kumar, Sanjeev Vidyarthi, Poonam Prakash, Copyright Year 2021, Published by Routledge						
2. 1st Edition International Conservation Law: The Protection of Plants in Theory and Practice by Rob Amos, Copyright Year 2020, Published by Routledge						
3. 1st Edition Planning for Climate Change: A Reader in Green Infrastructure and Sustainable Design for Resilient Cities, by Elisabeth M. Hamlin Infield, Yaser Abunnasr, Robert L. Ryan, Copyright Year 2019, Published by Routledge						
4. City Planning Legislation, by Crawford Andrew Wright 1873-1929, Copyright year 2013, Published by Hardpress Publishing						
5. Environmental Law in India, Third Edition, by Mohammad Naseem, Saman Naseem, Copyright year 2011, Published by Kluwer Law International						
MHD22R5304	VERNACULAR ARCHITECTURE AND PLANNING	L	T	S	X	C
		2	0	0	3	3
OBJECTIVE:						
Knowledge about vernacular building technologies and their use in Contemporary buildings, use of natural materials and energy-efficient systems, and application of these technologies to current building practices.						
UNIT 1:	INTRODUCTION	9				
Traditional principles of planning, primitive forms, symbolism, color, folk art etc., in the architecture of rural and tribal India; deserts of Rajasthan, Kutch and subterranean architecture of Gujarat.						
UNIT 2:	VERNACULAR BUILDING TRADITIONS–NORTH INDIA	9				
Wooden houses, Mansions (Havelis) Gujarat and Rajasthan – Shekawati Havelis, Havelis at Jaisalmer, House boats (Dhungas), Kashmir – materials of construction and constructional details – settlement planning						
UNIT 3:	VERNACULAR BUILDING TRADITIONS – SOUTH INDIA	9				

Wooden houses, palaces and theatres & family homes (Tharavads) in Kerala, constructional details such as joinery and elements of climate control. Chettinad houses and palaces in Tamilnadu – Lime plaster work, Heritage						
UNIT 4:	COLONIAL INFLUENCES	9				
Colonial influences on the Traditional Architecture of Christian houses, Colonial architecture of Goa – concept of a Bungalow, evolution of the verandh and other colonial elements of design & style. Architecture of Bengal and Victorian villas. Chisholm and Henry Irwin and the evolution of Indo Sarcenic architecture European construction techniques in such buildings and the influence of the vernacular traditions.						
UNIT 5:	SECULAR ARCHITECTURE	9				
Medieval period – citadels, palaces, towers, gateways, public buildings etc in the towns of Jodhpur, Jaisalmer, Jaipur, Udaipur & Gwalior. Planning principles elements of style, climate control and constructional details of the same- with case studies from selected topics						
TOTAL: 45 PERIODS						
REFERENCE:						
1. Think beyond architecture - Evidence Based Design approach to explore the Indian Vernacular Architecture: The Think Beyond Architecture Series by Saptarshi Sankar Chakrabarti, Copyrights year 2022, Published by Notion Press						
2. Vernacular Architecture of INDIA: Traditional Residential Styles and Spaces, by by Mr. Tejinder Singh Randhawa, Copyright year 2022, ISBN-13:979-8792914902, Independently published						
3. Vistara - The Architecture of India, by Carmen Kagal, Copyright year 1986, Published by The Festival of India						
4. New Architecture and Urbanism: Development of Indian Traditions by Deependra Prashad and Saswati Chetia, Copyright year 2010, Published by Cambridge Scholars Publishing VISTARA- The Architecture of India by Carmen Kagal						
5. Colonial Modernities: Building, Dwelling and Architecture in British India and Ceylon, by by Peter Scriver, Vikramaditya Prakash, Copyright year 2007, Published by Routledge						
6. Mud Architecture of the Indian Desert, by Kulbhushan Jain, Minakshi Jain, Copyright year 1992, Published by AADI Centre						
MHD22R5305	ENVIRONMENTAL PSYCHOLOGY AND BEHAVIORAL STUDIES	L	T	S	X	C
		2	0	0	3	3
OBJECTIVE:						
To introduce the students about interdisciplinary social science approaches and to explore ways that people experience environments and make decisions about them, both as individuals and also in the social contexts where environmental decision making is institutionalized						
UNIT I	INTRODUCTION TO ARCHITECTURAL PSYCHOLOGY	09				
Introduction to the discipline, its importance in the field of Architecture Understanding the principle of psychology– Form, perception, attention, concepts, types of concepts ,physical settings and varied emotions. Creative Thinking :Process of creativity, visual and creative thinking ,types of thinking, directed thinking, Convergent thinking divergent ,articulation of masses and spaces ,sense and sensation modalities –language of architecture and its role in creativity, like rhythm ,harmony ,balance and other visual traits.						
UNIT II	ENVIRONMENTAL AND HUMAN RESPONSE	09				
Environmental variables-fixed feature variable, semi- permanent feature variable, ambient feature variable and human comporment, human adaptation to the given environment ,collective behavior and spatial orders ,effects of color and behavior in built environment.						
UNIT III	CONCEPT OF BEAUTY AND HUMAN ATTITUDE	09				
Philosophies of beauty ,aesthetics and physio -psychological association to it and the human mind, simulated by 'pull' and 'push' factors of the environment physical manifestation and emotional impact .attitudes towards typical physical settings from ,space and attitude relations.						
UNIT IV	APPLICATION OF PSYCHOLOGY INARCHITECTURE DESIGN	09				
Evaluation of the satisfactory levels of a residential building. Parameters to provoke desired emotions in the built environment application of the knowledge in the design of a residence, community, neighborhood in all stages of design						
UNIT V	THE PSYCHOLOGY OF SUSTAINABLE BEHAVIOR / GREEN INTERVENTIONS	09				
The green organizational imperative- Green work performance- The psychology of going greenGreen recruitment, development and engagement-Maslow's Hierarchy of Needs- Herberg'sTheory. The Cycle of organizational Change and Progression -Challenges to sustainability and participation.						

TOTAL: 45 PERIODS						
REFERENCE:						
1. 1st Edition, Architectural Factors for Infection and Disease Control, by AnnaMarie Bliss, Dak Kopec, Copyright Year 2023, Published by Routledge						
2. Advances in Environmental Psychology (Volume 5): Methods and Environmental Psychology (Psychology Revivals), by by Andrew Baum , Jerome E. Singer, Copyright year 2020, Published by Routledge						
3. Introduction To Psychology, 7th Edition, by by Clifford Morgan, Richard King, John Weisz, John Schopler, Copyright year 2017, Published by McGraw Hill Education						
4. 1st Edition, Environmental and Architectural Psychology: The Basics, by Ian Donald, Copyright Year 2022, Published by Routledge						
5. 1st Edition, The Routledge Companion for Architecture Design and Practice: Established and Emerging Trends by Mitra Kanaani, Dak Kopec, Copyright Year 2016, Published by Routledge						
6. Environmental Psychology: People and Their Physical Settings, by Harold M. Proshansky, Copyright year 1976, Published by Holt McDougal						
MHD22R5306	PEDAGOGY: BASICS FOR ARCHITECTURE EDUCATION	L	T	S	X	C
		2	0	0	3	3
OBJECTIVE:						
<ul style="list-style-type: none"> • Pedagogy is an art and science of teaching and learning. • Objective of this subject is to understand Pedagogy of Architecture. 						
UNIT I	ARCHITECTURE PEDAGOGY	10				
Understanding meaning of Architecture and Peculiar Requirements of Architecture Education, Architecture Pedagogy and Andragogy, Creative Thinking and Critical Thinking, Decision-making and Problem-Solving						
UNIT II	MODELS OF TEACHING	10				
Models of Teaching: Blooms Taxonomy and its relevance to education, Advanced Organizer, Concept Attainment model, Simulations.						
UNIT III	SYNECTICS	10				
Synectics as a model of teaching. The essence of creativity in synectics. Use of synectics in the design studio. Various thinking skills, tools and techniques adopted by architects for deriving design ideas						
UNIT IV	TECHNIQUES OF TEACHING-LEARNING	15				
Techniques of teaching-learning: Maxims of teaching and its application to subjects of architecture, concept mapping, creating concept maps. Basic aspects of classroom management. Architecture Design Decision Models						
TOTAL: 45 PERIODS						
REFERENCE:						
1. 1st Edition The Routledge Companion to Architectural Pedagogies of the Global South, by Harriet Harriss, Ashraf M. Salama, Ane Gonzalez Lara, Copyright Year 2023, Published by Routledge						
2. 1st Edition Experiential Learning in Architectural Education: Design-build and Live Projects, by Burak Pak, Aurelie De Smet, Copyright Year 2023, Published by Routledge						
3. Essentials of Educational Technology, by Mangal S.K, Copyright year 2009, Published by Prentice Hall India Learning Private Limited						
4. 9 edition Models of Teaching by Bruce Joyce and Marsha Weils, Copyright year 2014, Published by Pearson						
5. Learning and Human Abilities by Klausmier and Ripple, Copyright year 1971, Published by Harper & Row, New York.						
6. An Eames Anthology by Charles Eames and Ray Eames, edited by Daniel Ostroff, Copyright year 2015, Published by Yale University Press						
MHD22R5307	ANTHROPOLOGY AND ARCHITECTURE	L	T	S	X	C
		2	0	0	3	3
OBJECTIVE:						
<ul style="list-style-type: none"> • To understand the relationship between society and the making of the built environment. • To understand phenomenology and the role of meaning in built form. • To look at place making from the architectural as well as urban design point of view. 						
UNIT I	RELATIONSHIP BETWEEN CULTURE, SOCIETY ANTHROPOLOGY AND ARCHITECTURE	06				
Concepts of culture, society, politics and anthropology – relation between society and built environment – introduction to cultural anthropology view of architecture.						
UNIT II	ANTHROPOLOGY OF TRADITIONAL ARCHITECTURE	10				
Architecture as a Process – kinship and house societies – perceptions of built form – conceptions of space – symbolism and technology – study of the above through case study of traditional architecture in India, Asia and Africa.						

UNIT III	ANTHROPOLOGY AND PLACE MAKING	15				
Conditions of modernity –Fragmentation of society – Heidegger and notions of dwelling – C Noeberg Schultz and notions of Genius Loci Rapoport and studies on the meaning of built environment – Joseph Rykwert and the idea of house – Bollnow and idea of space – Jan Pieper and the notions of sacred space						
UNIT IV	AN OVER VIEW OF URBAN ANTHROPOLOGY	06				
Meaning of urban studies and urban anthropology – role of cities – urban ethnography, primary units, major components and units of integration – anthropology and contemporary urban issues.						
UNIT V	SEMINAR	08				
Students would make presentations exploring the relevance and impact of anthropological studies on contemporary architecture and design through readings/case studies. The proposal must be discussed with course faculty prior to presentation.						
TOTAL: 45 PERIODS						
REFERENCE:						
1. 1st Edition Architectural Anthropology: Exploring Lived Space, by Marie Stender, Claus Bech-Danielson, Aina Landsverk Hagen, Copyright Year 2021, Published by Routledge						
2. The Living House: An Anthropology of Architecture in South-East Asia, by Roxana Waterson, Copyright year 2014, Published by Tuttle Publishing						
3. Human Space by O.F. Bollnow, Christine Shuttleworth, Copyright year 2011, Published by Hyphen Press						
4. Architecture & Anthropology (Architectural Design), by Clare Melhuish, Copyright year 1996, Published by Academy Press						
5. Second Edition, On Adam's House in Paradise: The Idea of the Primitive Hut in Architectural History, by Joseph Rykwert, Copyright year 1981, Published by MIT Press						
6. About the House: Lévi-Strauss and Beyond, by Janet Carsten and Stephen Hugh-Jones, Copyright year 1995, Published by Cambridge University Press						
MHD22R5401	REAL ESTATE DEVELOPMENT AND FINANCE	L	T	S	X	C
		3	0	0	0	3
OBJECTIVE:						
To familiarize students to the Real-estate market mechanisms and their implications on the process of city development and resource mobilization.						
UNIT I :	INTRODUCTION TO REAL ESTATE	10				
Real Estate Scope; classification of real estate activities and peculiarities; Factors affecting real estate market; Role of Government in real estate market; Statutory provisions, Laws, rules, and regulation, land use controls in property development, registration And licensing requirements –Knowledge base for assessment and forecasting the Real Estate market – environmental issues related to Real Estate Transactions.						
UNIT II :	PARTICIPANTS AND STAKE HOLDERS	10				
Role, Scope, working characteristics and principal functions of real estate participants and stakeholders; real estate consultants and their activities, role and responsibilities of property managers; Code of ethics for Real Estate participants; Good practices and managerial responsibilities						
UNIT III :	REAL ESTATE DEVELOPMENT	15				
Functions of real development like project formulation, feasibility studies, developing, costing and financing, managing including planning, Scheduling and monitoring of real estate projects, risk management , Facilities management, marketing/advertising, post construction management etc – Real estate investment, Sources and related issues.						
UNIT IV :	DOCUMENTATION	10				
Interests in real estate; Documentation in real estate processes; Transfer of titles and records; Real estate appraisal and valuation; Types of agreement between the consultants and principal – closing the real estate transactions.						
TOTAL: 45 PERIODS						
SUGGESTED SEMINAR TOPICS/ TERM PAPERS:						
Documentation of Real Estate practices in Indian and foreign markets						
REFERENCE:						
1. 4th Edition Urban Planning and Real Estate Development, by John Ratcliffe, Michael Stubbs, Miles Keeping, Copyright Year 2021, Published by Routledge						
2. 1st Edition Introduction to Real Estate Development and Finance, by Richard M. Levy, Copyright Year 2020, Published by Routledge						
3. Commercial Real Estate Analysis and Investments by Geltner/Miller/Clayton/Eichholtz, David Geltner, Copyright year 2013, Published by South Western Educational Publishing.						
4. Real Estate Development and Investment: A Comprehensive Approach, by S.P.Peca, Copyright year 2009, Published by Wiley Publications						
5. Real Estate Development: Principles and Process, by Mike E. Miles, Gayle L. Berens, Mark J. Eppli, Marc A.						

Weiss, Copyright year 2007, Published by Urban Land Institute

		L	T	S	X	C
MHD22R5484	THESIS	0	0	9	12	13
The Thesis is a self-organized project work undertaken by the student to demonstrate his design skills. It provides a forum to discuss work in progress with members of staff and invited critics. At the end of which a student is required to present a complete Design project developed by him from conception to design execution which will be assessed through a series of critical juries.						
TOTAL: 280 PERIODS						