### Scheme of Teaching and Examination

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM**

**PROPOSED SCHEME OF TEACHING AND EXAMINATION OF I SEM M.ARCH (Habitat Design)**

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<tr>
<th>Sl No</th>
<th>Subject Code</th>
<th>Title of Subject</th>
<th>Scheme of Teaching Periods* per Week</th>
<th>Scheme of Examination</th>
<th>Credits</th>
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<td>Lecture</td>
<td>Studio</td>
<td>Practical</td>
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<tr>
<td>1</td>
<td>14HDC11</td>
<td>Human Habitat: Studies and Design Thought</td>
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<tr>
<td>2</td>
<td>14HDC12</td>
<td>Planning Theory and Techniques</td>
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<td>3</td>
<td>14HDC13</td>
<td>Advanced Theory of Design: Architecture and Human Settlements, Theory of Urbanism</td>
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<tr>
<td>4</td>
<td>14HDS14</td>
<td>Society, Economics and the Human Habitat</td>
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<td>5</td>
<td>14HDS15</td>
<td>Urban Transportation and Networks: Spatial Structure of Habitat Systems</td>
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<td>6</td>
<td>14HDC16</td>
<td>Habitat Design Studio - I (A small community level study of existing habitats)</td>
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**Notes:**
- HDC: Habitat Design Core Course
- HDS: Habitat Design Supporting Course
- Minimum Marks for Pass: Theory: 40% Progressive Marks: 50% Viva-Voce: 40%
- *Periods: 50-60 Minutes Duration
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<td>14HDC21</td>
<td>Land Use Structure and Urban Morphology</td>
<td>3</td>
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<td>2</td>
<td>14HDC22</td>
<td>Ecology and Sustainable Habitat Systems</td>
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<td>3</td>
<td>14HDC23</td>
<td>Landscape Design and Site Planning</td>
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<td>4</td>
<td>14HDS24</td>
<td>Infrastructure Planning and Management</td>
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<td>5</td>
<td>14HDC25</td>
<td>Habitat Design Studio – II (Inner city regeneration and intervention)</td>
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<td>14HDE26</td>
<td>Urban Economics</td>
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<td>14HDE27</td>
<td>Real Estate development and Finance Heritage Habitats: Conservation and Renewal</td>
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<td>14HDE28</td>
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<td>Total</td>
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HDC: Habitat Design Core Course  
HDS: Habitat Design Supporting Course  
HDE: Habitat Design Elective Course  
Minimum Marks for Pass: Theory: 40%  Progressive Marks: 50% Viva-Voce: 40%  
*Periods: 50-60 Minutes Duration
SEMIESTER - I

14HDC11: HUMAN HABITAT: STUDIES AND DESIGN THOUGHT

CONTACT PERIODS: 3 (LECTURE) PER WEEK
PROGRESSIVE MARKS: 50
EXAM MARKS: 100

OBJECTIVE:
To introduce the students to the concept of holistic Habitat Design with Socio economic and Historic determinants and dimensions of urban Design and planning

OUTLINE:
Components of human habitat, Evolution of cities and towns in India, Socio economic and Historic determinants of urban growth and urban form.
Reading the city. Social structure, cognition, experience and urban form. 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.
Evolution of concepts of urban form and design in different cultures and in India. Utopian concepts.
Concepts in urban Design and planning.
Rise of Advocacy Planning, changing role of NGOs and Urban Social Movement in India.
Urban design survey - inventories; techniques/approaches to urban design;
Imageability, townscape and elements of urban design (Gordon Cullen, Kevin Lynch).
Historical examples of urban design projects.

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 books:
1. Kevin Lynch- Imageability of City
2. Camillo Sitte -City Planning according to Artistic principles
3. Kevin Lynch -Good City Form
4. Rob Krier -Urban street and Squares
5. Gordon Cullen -Townscapes
6. TSS for Urban Design
OBJECTIVE:
To introduce the basic concept of urban planning in terms of tools and methods and their application in modern context.

OUTLINE:
Planning terms and definitions. Basic principles of planning of settlements.


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

Concepts of Urban Land use, Systems affecting land uses and rationale for land use planning, Locational attributes of urban landuses.

Legal framework, Regulations, byelaws, standards and norms and their basis.

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

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

Suggested seminar topics/ term papers
Theories of Urban Planning, Choice Theory, Advocacy Planning, Action Planning, Mixed planning – Relevance in Indian context

Reference books:
1. Arthur Gallion - Urban Pattern
2. Urbanization and Urban System by Siddhartha N.Mukherjee -Cities
3. Peter Hall -Urban and Regional Planning Planning
4. K.P.Yadav, Vol 1-5- Encyclopedia of Economic Planning and Development
14HDC13: ADVANCED THEORY OF DESIGN:
Architecture of Human Settlements, Theory of Urbanism

CONTACT PERIODS: 3 (LECTURE)       PROGRESSIVE MARKS: 50
PER WEEK                        EXAM MARKS : 100

OBJECTIVE:
To gain exposure to advances in Design theory and its impact on cities of India and other countries.

OUTLINE:
Design theory and its impact on cities of India and other countries. Modern architectural and urban design movements. Post modernism and contemporary movements in art and architecture and urbanism. Critical study of Contemporary views of urbanism.
Environmental perception, cognitive and mental maps, image of towns and cities. Theory of urban form. Metaphors and iconic structures and their impacts.
Impact of structuralism and post structuralism, ideas of self similarity and fractals, neo classism, revivalism etc on habitat design theory.
Organic habitats and designed habitats. Impact of culture on human settlements.
Historic core and contemporary urbanism. Study of Ideas of historic layering of space and networks, lattices v/s trees as urban structural metaphors, growth and value addition v/s. sustainability. Gandhian thought and its relevance. etc.
Behavioral issues in urban design; principles of urban spatial organization; urban scale, urban spaces, urban massing; quality of urban enclosure.

Suggested seminar topics/ term papers
Readings on urbanism from contemporary literary and social commentaries.
Semiotics theory and reading habitat as a text. Myths and mythology of built environments.

Reference books:

1. Jon Lang -Creating Architectural Theory
2. Jon Lang -Urban Design
3. Kate Nesbit -Theorizing A New Agenda For Architecture
14HDS14: SOCIETY, ECONOMICS AND THE HUMAN HABITAT

CONTACT PERIODS: 3 (LECTURE)     PROGRESSIVE MARKS: 50
PER WEEK     EXAM MARKS                : 100

OBJECTIVE:

To understand the Spatial, Social and Economic dimensions of the urban fabric and their implications in designing settlements.

OUTLINE:

Types and structure of Human settlements and the geographic parameters of topography, climate, natural resources etc.
Concepts of culture, environment, society, community, groups; Social structure and institutions – continuity and change. And their impact on structure of human habitat, cites and towns.

Economic base of settlements, Economic growth. Dichotomy of rich – poor in relation to development etc. and their impact on habitat structure Economic issues in urban growth – Trends and patterns of Indian urban growth; Efficiency versus equity. Real Estate setup, market and demand analysis.


Concept of informal sector, concern for urban poverty and its impact on habitat.

Suggested seminar topics/ term papers
Critical readings of selected essays and commentaries on contemporary urban society and habitat issues in India and developing countries

Reference books suggested:
1. Ralph Thomlinson -Urban structure, social and Spatial character of cities
2. G.Duscan Mitchell -A new Dictionary of Sociology
3. Dr. Naseem A. Azad -Social and Economic Problems
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.

OUTLINE:
Scope of urban transport planning, interdependency of transport & land use, stages - system approach to transportation planning.

Urban Transportation systems; classification of transport systems; technological characteristics of transport modes and systems; the nature of demand and supply of transport services.

Mobility Concept – Introduction- Pedestrian and motorized and non-motorized vehicles- Mobility Measures

Urban Transportation surveys: Definition of study area, zoning, types of surveys, Forecasting traffic in relation planned land use.

Stages in Urban Transportation:


Trip Assignment –definition- Applications- Resistance to travel- Minimum travel path tree- Assignment Techniques-All- Or- Nothing- Multiple Route – Capacity Restraint- Diversion Curves


Parking in transport system, parking surveys, parking norms & standards and new approaches to parking systems.

Design of transport infrastructure.
Recent innovations in technologies and its probable impacts on future urban forms.
Government transport policies and evaluation of transportation proposals.

Reference books suggested:
1. Khanna and Justo -Highway Engineering
2. Kadiyali L R.-Traffic Engineering and Transportation Planning
3. Dimitriou H.T.- Urban Transport Planning and Developmental Approach
4. Michael J Bruton,- An Introduction to Transportation Planning
5. John Black -Urban Transport Planning and Design
14HDC16: HABITAT DESIGN STUDIO I: (A SMALL COMMUNITY LEVEL STUDY OF EXISTING HABITATS)

CONTACT PERIODS: 15 (STUDIO)  PROGRESSIVE MARKS: 200
PER WEEK                VIVA MARKS           : 200

OBJECTIVE:

The Habitat Studies Studio aims at studying and understanding the fabric of an existing habitat and also 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 fulfill 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.

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 books:
   1. Cliff Moughtin -Urban Design – Street and Square
   2. Kevin lynch -Site Planning
SEMESTER - II

14HDC21: LAND USE STRUCTURE AND URBAN MORPHOLOGY

CONTACT PERIODS: 3 (LECTURE) PER WEEK
PROGRESSIVE MARKS: 50 EXAM MARKS: 100

OBJECTIVE:

To understand various perceptive and cognitive elements in city structure, their role in shaping urban morphology

OUTLINE:

Introduction to urban geography - cognition, perception and spatial representation.

Renaissance and the reconfiguration 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.


Cognitive mapping - contemporary and traditional methods.

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

Suggested seminar topics/ term papers

Urban growth and system of cities; growth of metropolitan and mega cities scale, complexity. Metropolitan growth – Trends, characteristics, problems and socio-economic and political issues in India with reference to Asia.

Reference books:
1. Spiro Kostoff -City shaped
2. Sumita Ghosh -Introduction to settlement geography
4. Paul Knox-Urbanization
OBJECTIVE:
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.

OUTLINE:
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.
Various aspects ecology, ecological footprints, energy and resource depletion connected to development, pollution of soil, water, air and noise and visual pollutions. Destruction of food chains.
Issues of public health and sustainability.
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.
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.

Suggested seminar topics/ term papers
Water augmentation, Rain water harvesting, waste and waste water recycling, reuse and renewal of habitat resources

Reference books:
1. Dominique Gauzin-muller -Sustainable Architecture and Urbanism
2. Victor Olgyay -Design with Climate
3. Givony B -Urban Design in Different Climates
4. P.L.Lombardi -Evaluation of the Built Environment for Sustainability
5. Sudhakar Reddy -Urban Energy Systems
6. B.R.Barthwal -Environment Impact Assessment
14HDC23: LANDSCAPE DESIGN AND SITE PLANNING

CONTACT PERIODS: 3 (LECTURE)     PROGRESSIVE MARKS: 50
PER WEEK                      EXAM MARKS   : 100

OBJECTIVE:
Role of land use planning in settlement studies and design.

OUTLINE
Scope of land use planning:
Behavioral issues in landscape design; principles and aesthetic theory in landscape design;
Land form design and elements of geomorphology, hydrology, storm water management in landscape planning.

Site Planning
• Introduction to ecological approach to site analysis and planning with emphasis on study of natural and
  manmade features of site.
• Landscape components engaged in site planning process, plant materials and design concepts, landscape
  engineering techniques for site and related infrastructure development.
• Historical perspective on natural and manmade landscapes including historic gardens, parks, and other open
  public spaces.
• Landscape design concepts and design of open and public spaces, recreational areas, roadside landscapes,
  etc.

Support, System Design
• Introduction to Urban services network -at -site level and related planning standards, concepts of sustainable
  infrastructure development from ecological standpoint.
• Solid waste management, surface water harvesting and ground water recharge, water based wastes disposal
  and recycling concepts towards achieving sustainable development.

Electrical and other site infrastructure planning standards and disposition criteria.
Movement network, disposition and design of movement infrastructure, planning and design standards for parking,
road geometry, etc.
Introduction to site and urban networks and components, related planning and design standards, disposition criteria
and quantitative assessment methods at site level.

Site Planning and Support System Design
Application of above theoretical base into site-specific planning and infrastructure development projects.
Application of ecological approach to site analysis and planning process of large sites.
Site surveys for natural and manmade features of site and its relationship with larger natural and urban ecological
system.
Identification and programming of site services and related infrastructure development.
Criteria for activity and built form disposition. Design of open space system.

Suggested seminar topics/ term papers
Case studies of recent landscape design and site planning projects

Reference books:
1. Givoni B -Climate and Urban Design
2. TSS - Landscape Design
3. Ian McHarg -Design with Nature
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.

OUTLINE:

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.

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.
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.
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.

Suggested seminar topics/ term papers
Case Studies and best practices in India and abroad

Reference books:
1. Eduardo Vasconcellos -Urban Transport, Environment and Equity
2. B.G.Hutchinson -Principles of Urban Transport Systems Planning
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.

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 books:

1. Geoffrey Broadbent - Emerging concepts in urban space design
2. Land Development Handbook, Planning Engineering and Surveying by Dew, Berry and Davis
3. Urban Design – Green Dimensions by Cliff Moughtin
OBJECTIVE:

To expose the students to the fundamentals of Urban Land economics.

OUTLINE:

Key Concepts of urban economics, Scope of Land economics

Economic principles of Urban Land uses, Urban Land use patterns – CBDs, Zone of Transition, Suburban areas, Rural-Urban fringe, Urban location theory, Location Models

Relevance of Land economics for spatial planning, urban base – demand and supply

Land utilization costs, capital costs, rent & price, building costs, professional charges

Sources of finance, constraints in resources, Private & Public Sectors, replicability and feasibility

Economic aspects of land policies at various levels of decision making

Suggested seminar topics/ term papers

Developments in India and abroad

Reference books:

1. Jack Harvey -Urban Land Economics
2. Amitabh Kundu-Urban land markets land price changes.
OBJECTIVE:

To familiarize students to the Real-estate market mechanisms and their implications on the process of city development and resource mobilization.

OUTLINE:

- Introduction and history of Real-estate Development.
- Real-estate market and assessment techniques, economic cycles, demand and supply, values and rental structure, and advertising etc.
- International investments and the packaging, implications on Real estate market, public-private participation, and Real-estate development agencies etc.
- 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 etc.
- Infrastructure development and quality control post development management and maintenance in Real-estate development.
- Case studies of good practices in development of Real estate

Suggested seminar topics/term papers

- Documentation of Real Estate practices in Indian and foreign markets

Reference books:

1. The Economics of Commercial Property Markets, Michael Ball, Colin Lizieri, Bryan D. Macgregor
2. Real Estate Market Analysis: A Case Study Approach by Adrienne Schmitz
14HDE28: HERITAGE HABITATS: CONSERVATION AND RENEWAL

CONTACT PERIODS: 2 (LECTURE)  PROGRESSIVE MARKS: 50
PER WEEK

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.

OUTLINE:

Interactive session of History heritage and cities, traditional water systems.
Introduction to conservation, historic and inner city areas and other Natural elements.
Concepts and approaches to conservation in India and other countries.
Socio-economic development, tourism infrastructure development, and role of urban conservation.
Institutional Aspects of Conservation - Charters - World Heritage legislation and Sites Conservation Acts
Legislation Archaeological Acts Institutional framework for conservation in India and other countries.
Historic overview of recycling cities.

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.
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.
Recent successful practices in urban conservation and regeneration in India and other countries.

Suggested seminar topics/ term papers

Case studies of adaptive reuse and Inner city revitalization.

Reference books:
1. Alan Dobby - Conservation and Planning
2. Herat – The Islamic City (A study in Urban Conservation)