

**SAVITRIBAI PHULE PUNE UNIVERSITY**

**CONTENT REVISIONS FOR  
SEMESTER I & II SYLLABUS OF  
M.ARCH (URBAN DESIGN)  
(To be implemented w.e.f. A.Y. 2017-18)**

**BOARD OF STUDIES IN ARCHITECTURE  
FACULTY OF ENGINEERING**

## SEMESTER –I

URBAN DESIGN STUDIO–1			
Subject Code -			
Teaching Scheme		Examination Scheme	
Hours / Week	9	Paper	Nil
Lectures/ week	2	Term work	Nil
Studio Periods/ week	10	Sessional (Internal)	100
<b>Total Contact Periods/ week</b>	<b>12</b>	Sessional (External)	100
		Oral (Internal)	100
		Oral (External)	100
<b>Total Credits</b>	<b>9</b>	<b>Total Marks</b>	<b>400</b>

### Objective:

The studio is the introduction of the student to the realm of urban design. The objective is to expose them to the complexities of the design process. To create an understanding of the role of various physical, social, economic and infrastructural components and decision making processes; the contribution of related disciplines associated with the production of the city. The studio will also familiarize the student with urban design terminologies, methods of surveys and site analysis.

### Course Outline:

The studio will be divided to the following four modules:

- Documentation and presentation techniques of a precinct.
- Documenting the same precinct from infrastructure and management standpoint.
- Documenting the same precinct statistically and as a human network, through ownership, use cycles, association value etc.
- Identification of problems and issues. Compiling the documentation as a report.
- Conceptual Design Scheme.

**The design tutorial** will assist the students in acquiring skills of documentation, analysis and presentation of human networks urban design projects and typological studies.

### The Design Workshop:

The studio needs to have an inbuilt Design workshop/s. This is a seminar course conducted by invited professionals who may demonstrate the design development process of project.

This is an interactive session in which students will directly interact with the professionals after the presentation. Projects may vary in scale and content and should preferably raise urban level or fundamental design issues.

**Sessional Work:**

- For this subject students will be assessed based on their process/es of documentation, methods of analysis, preparation of design brief, design demonstration and the basic understanding of the urban design process along with the content.
- Minimum Assignment/s submissions towards Sessional Work & Oral Examinations shall include:
  1. Comprehensive report of documentation, studies and analysis done by students in groups not more than four in each.
  2. Design portfolio showing design decision process and conceptual design done by students in groups not more than four in each.

**Learning Outcome:**

Students will appreciate, understand and analyze real site conditions in an urban area, learn survey and documentation techniques, assessing needs and preparation of programming of design intervention and design demonstration.

\*\*\*

<b>SITE PLANNING</b>			
<b>Subject Code -</b>			
<b>Teaching Scheme</b>		<b>Examination Scheme</b>	
Hours / Week	4	Paper	Nil
Lectures/ week	2	Term work	Nil
Studio Periods/ week	4	Sessional (Internal)	75
<b>Total Contact Periods/ week</b>	<b>6</b>	Sessional (External)	75
		Oral (Internal)	Nil
		Oral (External)	Nil
<b>Total Credits</b>	<b>4</b>	<b>Total Marks</b>	<b>150</b>

**Objective:**

To develop skills that enables an urban designer to deal with large sites in a comprehensive manner from ecological considerations to the conceptual understandings of support systems like services and related infrastructure.

**Course Outline:**

- a. Introduction to site planning & Ecology, Site Planning philosophy
- b. Ecological factors in site evaluation
- c. Site resource systems
  - i. Physiographic
  - ii. Geology and soils
  - iii. Hydrology
  - iv. Micro-climate
  - v. Vegetation
  - vi. Wild life, terrestrial and aquatic
- d. Urban vegetation, planning & maintenance
- e. Ecological planning processes, theories and approaches
- f. Site grading, road networks and drainage

- g. Services and related infrastructure with respect to natural resources
- h. Surveys and overlays
- i. Site planning goals and objectives, programme development

The studio will choose a suitable site where the students will map, evaluate and analyse the site from the knowledge imparted in the theory classes and will produce a site plan for an appropriate design programme having multiple activity/functional zones.

**Sessional Work:**

For this subject students will be assessed based on their process/es of documentation, methods of analysis and the judicious understanding of the site planning process along with the content.

Minimum Assignment/s submissions towards Sessional Work shall include:

- a. Comprehensive report of appropriate data collection, documentation, studies and analysis done by students in groups not more than three.
- b. Site planning portfolio showing planning & design decision process and conceptual design done by students in groups not more than three.

**Learning Outcome:**

Students will be enabled to deal with varying site-based natural and ecological systems with reference to urban design projects and the city at large.

**Suggested Reading/References:**

Kevin Lynch, Good City form, MIT Press, Cambridge  
 Kevin Lynch and Gary Hack, Site Planning, MIT Press, Cambridge  
 Peter Jacobs and Douglas Way, Visual Analysis of Landscape Development, Harvard press  
 Gary O. Robinette (Ed), Landscape Planning and Energy Conservation, Van-Nostrand Reinhold  
 McHarg,I.L.(1969)Design With Nature, New York, The Natural History Press

\*\*\*

<b>URBAN DESIGN METHODOLOGIES</b>			
<b>Subject Code -</b>			
<b>Teaching Scheme</b>		<b>Examination Scheme</b>	
Hours / Week	3	Paper	50
Lectures/ week	2	Term work	Nil
Studio Periods/ week	2	Sessional (Internal)	25
<b>Total Contact Periods/ week</b>	<b>4</b>	Sessional (External)	25
		Oral (Internal)	Nil
		Oral (External)	Nil
<b>Total Credits</b>	<b>3</b>	<b>Total Marks</b>	<b>100</b>

**Objective:**

The objective of the course is to provide explanations of Urban Design terminologies, definitions and methodologies for shaping and understanding of urban form; derived from both theory and empirical evidence and drawing references from various established texts.

**Course Outline:**

- Concepts of place and space
- Urban design terminologies and definitions
- Methods of urban design surveys, documentation and representation
- Cognitive mapping – contemporary and traditional
- Space analysis
- Determinants of urban form
- Components of urban structure
- Concepts of layering
- Size, shape and form of cities
- Typological studies
- Architectural expression

**Sessional Work:**

Assignment/s need to explore various urban design methodologies, their theoretical background, their understanding of urban form & space and their applications.

Minimum Assignment/s submissions towards Sessional Work & Oral Examinations shall include:

- Each student will study urban design methodologies in terms of its background, its conception, its details, its reflection on urban form & space, and its relevance in today's context, etc.
- Assignment to be designed by the tutor to understand its application in an appropriate context.

**Learning Outcome:**

Students are exposed to different methodologies and approaches in urban design.

**References:**

Broadbent, Geoffrey. Emerging Concepts of urban Design  
 Bacon, Edmund, N. Design of Cities  
 Gosling, David & Maitland, Barry, Concepts of Urban design  
 Morris, Anthony, J.E. History of Urban Form  
 Kostof, Spiro, The City Assembled: The Elements of Urban Form Through History  
 Kostof, Spiro, City Shaped: Urban Patterns and Meanings through History

\*\*\*

<b>ELECTIVE-1</b>			
<b>Subject Code -</b>			
<b>Teaching Scheme</b>		<b>Examination Scheme</b>	
Hours / Week	2	Paper	Nil
Lectures/ week	1	Term work	Nil
Studio Periods/ week	2	Sessional (Internal)	50
<b>Total Contact Periods/ week</b>	3	Sessional (External)	50
		Oral (Internal)	Nil
		Oral (External)	Nil
<b>Total Credits</b>	<b>2</b>	<b>Total Marks</b>	<b>100</b>

**Objective:**

To develop comprehensive understanding of urban design by studying it from various perspectives.

**Elective topics to be suggested under following three perspectives:**

- **Humanities and Social Sciences:**
  - a. Urban Psychology
  - b. Semiotics
  - c. Behavioural Science
  - d. Anthropology
  - e. Gender Studies, etc.
- **Urban Management, Governance and Finance :**
  - a. Various project reports for project formulation like Techno economic feasibility reports, Detail project reports etc,
  - b. Project planning & financial management of urban projects
  - c. Disaster management in urban areas
  - d. Housing finance & management
  - e. Urban Logistics,
  - f. Water & Energy management in the urban context, etc.
- **Interdisciplinary Design and Planning fields:**
  - a. Imagining Cities in Visual Arts/ Performing Arts/ Literature/ Cinema
  - b. Urban Aesthetics,
  - c. Landscape Urbanism,
  - d. Art and Science of Conservation,
  - e. Environmental Planning,
  - f. Future Cities,
  - g. G.I.S. and other softwares,
  - h. Computer Aided Urban Design, etc.

**Notes:**

1. For Elective-I, II & III above mentioned three perspectives are suggested so as to be able to provide the individual student an opportunity to customised the course as per his/her interest (three broad perspectives mentioned above) and strengthen their knowledge in that particular perspective, beyond the core subjects of urban design.
2. Institutes are suggested to offer distinct electives under these perspectives for all three semesters, wherein no repetition of any particular elective topic shall happen.

**Sessional Work:**

Sessional work could be decided by the respective tutor conducting a specific elective. Sufficient number of assignments to be conducted and the same to be designed in such a manner that student's ability to think laterally about the cities and its complexities could be assessed.

**Learning Outcome:**

Students are exposed to the various aspects & concepts in relation with urban development under above mentioned streams.

**Suggested Reading/References:**

All books/ Journals/ magazines / unpublished/ published thesis/ research related to the topic of elective offered.

<b>READING THE CITY-1</b>			
<b>Subject Code -</b>			
<b>Teaching Scheme</b>		<b>Examination Scheme</b>	
Hours / Week	4	Paper	Nil
Lectures/ week	3	Term work	Nil
Studio Periods/ week	2	Sessional (Internal)	75
<b>Total Contact Periods/ week</b>	5	Sessional (External)	75
		Oral (Internal)	Nil
		Oral (External)	Nil
<b>Total Credits</b>	<b>4</b>	<b>Total Marks</b>	<b>150</b>

### **Objective:**

The aim of the course is to explore the range of nuances and methods to understand the morphology of the city drawn broadly from disciplines of urbanism, geography, planning and legislative mechanisms. The course also seeks to investigate into theories of place making and the contribution of technology and economy leading to an understanding of what is “urban” today.

### **Course Outline:**

The course is structured around two modules:

#### i) City space

1. The idea of urban, urbanization and urbanism
2. Notions of a city, urban society and culture through selected writings
3. Participatory and advocacy planning, suburban development.
4. Space as contested domain – public private, concept and production of everyday space
5. Spaces of modernity vs spaces of social justice, post-modernity and the city
6. Notions of space and place with reference to indigenous cities.

#### ii) Economics, Politics and Governance

- Theories of development, debates on development vs growth
- History of economic thought and spatial dimensions of economic thought
- Overview of social and economic change in India
- Structure of city governance in India
- Town Planning Acts and regulations

### **Sessional Work:**

There will be a Seminar done by an individual student that will enquire into the range of tools that contribute to urban morphology, development regulations, and urban processes, non- formal settlements, etc. Seminar should necessarily explore the theoretical understanding of these various aspects.

Minimum Assignment/s submissions towards Sessional Work & Oral Examinations shall include:

- a. Report based on seminar topic (A4 size) with appropriate case references need to produced individually. (Number of words = 4000 to 5000)
- b. Power point presentation of the seminar topic

### **Learning Outcome:**

To expose students to read a city through various tangible and intangible aspects which shall be continued in Sem II as a part of Reading the city II

<b>HISTORY OF URBAN FORM &amp; SPACE</b>			
<b>Subject Code -</b>			
<b>Teaching Scheme</b>		<b>Examination Scheme</b>	
Hours / Week	3	Paper	50
Lectures/ week	2	Term work	Nil
Studio Periods/ week	2	Sessional (Internal)	25
<b>Total Contact Periods/ week</b>	4	Sessional (External)	25
		Oral (Internal)	Nil
		Oral (External)	Nil
<b>Total Credits</b>	<b>3</b>	<b>Total Marks</b>	<b>100</b>

### **Objective:**

The course is intended as a comprehensive study of urban form and urban spaces in historical and theoretical terms.

### **Course Outline:**

1. Introduction to urban design – ideology/theory and the various concerns of the field. Urban Design through history
2. Introduction and Study - the evolution of city form- morphology (Urban form and Urban Process). Various theoretical views associated with nature of city form - Normative and positive theories; Cosmic, Machine and Organic Models; Descriptive and functional theories; alternative theoretical postulations.
3. Study of the evolution of settlement patterns and urban form & space chronologically through history (The Early Towns, Renaissance, Temple Towns, Medieval Towns, Colonial Towns, Modern city; early cities of capitalism, City beautiful movement, cities in the garden, Contemporary and Global cities, etc.)
4. Understanding Urban Process (rise and fall of cities; disaster; destruction; incremental changes; urban renewal, etc.)

### **Sessional Work:**

The assignments will study a variety of public spaces both historical and contemporary critically analyzing the origins and their derivatives to explore the relationship between its form and their derivatives.

Minimum Assignment/s submissions towards Sessional Work & Oral Examinations shall include:

- a. Each student will study minimum five cases from different context & theoretical background, to understand its form, its origins, its derivatives and its diagrams.

### **Learning Outcome:**

Students are equipped to be exposed to the historical evolution and transformation of settlement pattern along with urban form and space.

### **References:**

Spiro Kostof , The City Assembled , Thames and Hudson.  
 Spiro Kostof , The City Shaped, Thames and Hudson.  
 Jon Lang , Urban Design Typology and procedures, Architectural Press  
 A.E.J. Morris , History of Urban Form, Longman Scientific and Technical.  
 Kevin Lynch , Good City Form, MIT Press.  
 Edmund Bacon, Design of Cities.  
 Geoffrey Broadbent, Emerging Concepts of urban Design



## SEMESTER –II

URBAN DESIGN STUDIO–2			
Subject Code -			
Teaching Scheme		Examination Scheme	
Hours / Week	9	Paper	Nil
Lectures/ week	2	Term work	Nil
Studio Periods/ week	10	Sessional (Internal)	100
<b>Total Contact Periods/ week</b>	<b>12</b>	Sessional (External)	100
		Oral (Internal)	100
		Oral (External)	100
<b>Total Credits</b>	<b>9</b>	<b>Total Marks</b>	<b>400</b>

### Objective:

The objective of this studio is to hone the theoretical knowledge of the student from the first semester in resolving a design problem on a Green Field site.

### Course Outline:

- The first part of the studio will be an introduction to urban design city study, analyzing the various factors that determine the morphology of the city and the referencing of selected sites to the study. As far as practicable the project should be a live problem carried out with the active participation of the client.
- The studio will assist the students in the methodology of conducting an urban design city study, techniques of surveys, analysis of information and presentation, typological studies and designs.
- The studio will involve preparation of design brief, preparation of structure plan and detailed design demonstrations along with implementation strategies.

### Sessional Work:

For this subject students will be assessed based on their process/es of documentation, methods of analysis, theorisation and articulation of the design problem and the design response.

Minimum Assignment/s submissions towards Sessional Work & Oral Examinations shall include:

- Comprehensive report of documentation, studies and analysis done by students in groups not more than four each.
- Design portfolio-1 showing theorisation and articulation of design problem, design decision process, structure plan & design strategies done by students in groups not more than four each.
- Design Portfolio-2 showing design demonstration by an individual student for a part of from the structure plan.

### Learning Outcome:

Students are enabled to conceive urban design projects for green-field sites preferably for live and real urban conditions, thereby understanding client dynamics as well as tangible deliverables.

<b>URBAN DESIGN THEORIES AND CRITICISM</b>			
<b>Subject Code -</b>			
<b>Teaching Scheme</b>		<b>Examination Scheme</b>	
Hours / Week	4	Paper	Nil
Lectures/ week	2	Term work	Nil
Studio Periods/ week	4	Sessional (Internal)	75
<b>Total Contact Periods/ week</b>	<b>6</b>	Sessional (External)	75
		Oral (Internal)	Nil
		Oral (External)	Nil
<b>Total Credits</b>	<b>4</b>	<b>Total Marks</b>	<b>150</b>

### **Objectives:**

This is in continuation to the history of urban form and space studied in the first terms, explores the evolution of ideas and principles of Urban Design by centering on the relationship between societal change and the formal organization of the urban environment. Historical, theoretical and critical lines of arguments will be pursued by examining urban places and spaces in their making, use and change, ranging from early civilizations to the present.

### **Course Outline:**

- A critical understanding of changing attitudes towards urbanism and urban spaces
- A critical examination of current trends in contemporary urban design attitudes in Indian context.

### **Sessional Work:**

The seminar will study a variety of public spaces both historical and contemporary critically analyzing the origins and influences and success or failures of the designs.

Minimum Assignment/s submissions towards Sessional Work & Oral Examinations shall include:

- a. Comprehensive Analytical Report based on seminar topic with appropriate case references and theories need to be produced individually.
- b. Power point presentation of the seminar topic

### **Learning Outcome:**

Students are equipped to study and understand the urban spaces critically in terms of their production processes and their performances as social and public spaces

### **References:**

Spiro Kostof , The City Assembled , Thames and Hudson.  
 Spiro Kostof , The City Shaped, Thames and Hudson.  
 Jon Lang , Urban Design Typology and procedures, Architectural Press  
 A.E.J. Morris , History of Urban Form, Longman Scientific and Technical.  
 Kevin Lynch , Good City Form, MIT Press.  
 Edmund Bacon, Design of Cities.  
 Geoffrey Broadbent, Emerging Concepts of urban Design

<b>PLANNING TOOLS FOR URBAN DESIGN</b>			
<b>Subject Code -</b>			
<b>Teaching Scheme</b>		<b>Examination Scheme</b>	
Hours / Week	3	Paper	50
Lectures/ week	2	Term work	Nil
Studio Periods/ week	2	Sessional (Internal)	25
<b>Total Contact Periods/ week</b>	4	Sessional (External)	25
		Oral (Internal)	Nil
		Oral (External)	Nil
<b>Total Credits</b>	<b>3</b>	<b>Total Marks</b>	<b>100</b>

### **Objective:**

The aim of the course is to expose the student to the principles of planning and critically evaluate different planning processes prevalent in India and abroad. A critical overview of relevant reference case study to be used as an example to understand planning processes and its impact on the development and growth of the City.

### **Course Content:**

An overview of statistical and survey techniques used to in the preparation of a planning and urban design programmes explaining the basic definitions and informing the student of the various methods, techniques and processes of planning, focusing on the latest methods of assessing and gathering information.

- Concepts and theories of planning and their applications as Master Plans, Development Plans, Structure Plans etc.
- Planning terms and their definitions
- Concepts of Zonal Plans, Area Development Plans, Development Schemes, Urban Renewal, Redevelopment, City Development Plans, Planned Unit Development etc.
- Concepts of land use, zoning regulations, mixed use development, Special Economic Zones
- Planning surveys and sampling, evaluation of planning requirements
- Planning standards and models
- Overview of Legal and statutory aspects of Urban & Regional Planning, Town Planning Acts.
- Land acquisition Act and process, Land Pooling and other schemes related to green field projects, Transfer of Development Rights
- Public participation in planning process

### **Sessional Work:**

Minimum Assignment/s submissions towards Sessional Work & Oral Examinations shall include:

- a. Sufficient number of tutorials in the class to review students understanding of the subject.
- b. Critical report writing on any one of the planning tool for urban design (A4 size report upto 1500 words with appropriate figures, images, diagrams, etc.)

### **Learning Outcome:**

Students are equipped with necessary information on town planning theories, principles, techniques and methodologies.

<b>ELECTIVE-2:</b>			
<b>Subject Code -</b>			
<b>Teaching Scheme</b>		<b>Examination Scheme</b>	
Hours / Week	2	Paper	Nil
Lectures/ week	1	Term work	Nil
Studio Periods/ week	2	Sessional (Internal)	50
<b>Total Contact Periods/ week</b>	3	Sessional (External)	50
		Oral (Internal)	Nil
		Oral (External)	Nil
<b>Total Credits</b>	<b>2</b>	<b>Total Marks</b>	<b>100</b>

**Objective:**

To develop comprehensive understanding of urban design by studying it from various perspectives.

**Elective topics to be suggested under following three perspectives:**

- **Humanities and Social Sciences:**
  - f. Urban Psychology
  - g. Semiotics
  - h. Behavioural Science
  - i. Anthropology
  - j. Gender Studies, etc.
- **Urban Management, Governance and Finance :**
  - g. Various project reports for project formulation like Techno economic feasibility reports, Detail project reports etc,
  - h. Project planning & financial management of urban projects
  - i. Disaster management in urban areas
  - j. Housing finance & management
  - k. Urban Logistics,
  - l. Water & Energy management in the urban context, etc.
- **Interdisciplinary Design and Planning fields:**
  - i. Imagining Cities in Visual Arts/ Performing Arts/ Literature/ Cinema
  - j. Urban Aesthetics,
  - k. Landscape Urbanism,
  - l. Art and Science of Conservation,
  - m. Environmental Planning,
  - n. Future Cities,
  - o. G.I.S. and other softwares,
  - p. Computer Aided Urban Design, etc.

**Notes:**

1. For Elective-I, II & III above mentioned three perspectives are suggested so as to be able to provide the individual student an opportunity to customised the course as per his/her interest (three broad perspectives mentioned above) and strengthen their knowledge in that particular perspective, beyond the core subjects of urban design.
2. Institutes are suggested to offer distinct electives under these perspectives for all three semesters, wherein no repetition of any particular elective topic shall happen.

**Sessional Work:**

Sessional work could be decided by the respective tutor conducting a specific elective. Sufficient number of assignments to be conducted and the same to be designed in such a manner that student's ability to think laterally about the cities and its complexities could be assessed.

**Learning Outcome:**

Students are exposed to the various aspects & concepts in relation with urban development under above mentioned streams.

**Suggested Reading/References:**

All books/ Journals/ magazines / unpublished/ published thesis/ research related to the topic of elective offered.

\*\*\*

<b>READING THE CITY-2</b>			
<b>Subject Code -</b>			
<b>Teaching Scheme</b>		<b>Examination Scheme</b>	
Hours / Week	4	Paper	Nil
Lectures/ week	3	Term work	Nil
Studio Periods/ week	2	Sessional (Internal)	75
<b>Total Contact Periods/ week</b>	5	Sessional (External)	75
		Oral (Internal)	Nil
		Oral (External)	Nil
<b>Total Credits</b>	4	<b>Total Marks</b>	<b>150</b>

**Objective:**

The objective of the course is to create an understanding of the reproduction of contemporary culture in the post-colonial city resulting from interdisciplinary participation drawn from sociology, history, cultural studies and political analysts. It is a continuation of the Reading the City-I from semester I.

**Course Content:**

The course is structured around three modules:

## i) Culture and Society

- Overview of cross-cultural influences in city development
- City as a human network – social structure and urban form
- Social access – territoriality, exclusion and inclusion, minority groups and the disadvantaged, children and the geographies of disability
- Urban life-style diversity and spaces of consumption
- Contemporary culture – the metropolitan experience

## ii) Post-colonial city

- Urbanism, colonialism and the world economy

- Cities of uneven economic development, nature of structural reform
- The politics of globalization and liberalization and their manifestations in the post-colonial city
- Memory violence and urban space, case examples of South Asian cities

iii) City in transition

From the geographies of modernity to post-modernity and beyond, the case example of Los Angeles and contemporary development trends across the world

- Discoveries and implications of the post-metropolis, globalization and transnational urbanism
- Contemporary trends in the Asian city, conflicts, contestations and hybridization within the multilayered urbanities of Indian cities

**Sessional Work:**

The Seminar, through case studies will seek to establish an understanding of the process of layering – to read the current city backwards. Assignment to be judged for student’s ability to theorise and articulate his/her reading of the context.

Minimum Assignment/s submissions towards Sessional Work & Oral Examinations shall include:

- Report based on seminar topic (A4 size) with appropriate case references need to produced individually. (Number of words = 4000 to 5000)
- Power point presentation of the seminar topic

**Learning Outcome:**

Students are informed of contemporary urban processes and characteristics of urbanism from the post-colonial period to the present day including theories and discourses across related fields and disciplines.

\*\*\*

<b>INFRASTRUCTURE, TRAFFIC AND TRANSPORT PLANNING</b>			
<b>Subject Code -</b>			
<b>Teaching Scheme</b>		<b>Examination Scheme</b>	
Hours / Week	3	Paper	50
Lectures/ week	2	Term work	Nil
Studio Periods/ week	2	Sessional (Internal)	25
<b>Total Contact Periods/ week</b>	<b>4</b>	Sessional (External)	25
		Oral (Internal)	Nil
		Oral (External)	Nil
<b>Total Credits</b>	<b>3</b>	<b>Total Marks</b>	<b>100</b>

**Objective:**

The course is intended as an introduction to the infrastructure needs of an urban environment and fundamental concepts which cater to such needs. It is an introduction to the issues related to traffic & transportation in cities and various planning tools & mechanisms to cater to the same.

**Course Outline:**

1. Concepts of urban infrastructure, social and physical infrastructure.

2. Urban Form, Size and implications on services. Layout of urban area, siting of services and land-use and efficiency. Basics of service network - Water supply, sewerage/drainage and waste management.
3. Urban Social infrastructure; qualitative and quantitative techniques of assessing requirements, planning amenities and institutions.
4. Financing of infrastructure needs of city; national and international agencies involved in infrastructure provisions.
5. Introduction: Scope of urban transport planning, interdependency of land use and traffic system, traffic system approach to urban transportation.
6. Stages in Urban Transportation: Trip generation, trip production, trip distribution, modal split and trip assignment.
7. Urban Transportation surveys: Definition of study area, zoning, types of surveys, Forecasting traffic in relation planned land use. Principles of planning and design of road network and engineering classification of roads, intersections and elevated roads.
8. Land Use Transport models: Lowry model, Garin-Lowry Model, applications in India.
9. Public Transportation modes: Systems in India, problems and prospects, present practices in urban transportation. Metro, mono, and high capacity buses. System selection.
10. Intersection Design: Elements of intersection maneuver area, types of intersections, flyover, grade separators, subways, underpass, and suitability of each type. Rotary and its design, Roundabouts, etc.

**Sessional Work:**

The internal assessment should preferably be related to the design studio surveys or on-site information for which specific surveys can be conducted during the site surveys for the design studio.

**Learning Outcome:**

Students are informed of urban infrastructure both social and physical, transportation systems, standards policies and techniques for design of pedestrian spaces, parking and other modes of travels, etc. along with their relationship with urban design.

**References:**

Kadiyali L.R. Traffic Engineering and Transportation Planning, Khanna Publications.  
 Dimitriou H.T. Urban Transport Planning and Developmental Approach, Routledge, London.  
 Michael J Bruton, An Introduction to Transportation Planning, Hutchinson, London.  
 Black John, Urban Transport Planning and Design, Crown Helm Ltd, London.  
 Papacostas and Prevendours, Transportation Engineering and Planning, PHI Publication.  
 Khisty and Lal, Transportation Engineering PHI publication.  
 CPHEERI Manual on Water Supply and Sewerage, New Delhi.  
 T.P.Salvats, Environmental Engineering and Sanitation, Wiley and Sons, New York