

M.PLAN
URBAN PLANNING and HOUSING
SCHEME and SYLLABUS



OCTOBER 2016

DEPARTMENT OF ARCHITECTURE AND PLANNING
MANIT , BHOPAL

Syllabus M.Plan (Urban Planning and Housing)

M.Plan. (Integrated - Urban Planning and Housing): First semester

Course no.	Subject	Periods per week		Theory paper		Credits
		L	T	No	Duration	
CM 511	Introduction to planning	3	-	1	3	3
CM 512	Urban Economics and Sociology	3	-	1	3	3
CM 513	Planning Practices and Legislation	3	-	1	3	3
CM 514	Planning Techniques	3	-	1	3	3
CM 515	Quantitative Research Methods	3	-	1	3	3
CM 516	Project formulation and Appraisal	3	-	1	-	3
CM 517	Geo-Informatics	-	4	-	-	2
CM 518	Planning Studio - I	-	8	-	-	4
	Total	18	12			24

* **Note:** CM refers to common subjects for M. Plan (Housing) and M. Plan (Urban Development)
Professional internship of **4 Weeks** to be taken up in the semester break after first semester – office / agency finalized by the department.

M. Plan. (Urban Planning) : Second semester

Course no.	Subject	Periods per week		Theory paper		Credits
		L	T	No	Duration	
UP 521	City and Metropolitan Planning	3	-	1	3	3
UP 522	Infrastructure Planning	3	-	1	3	3
UP 523	Traffic and Transportation Planning	3	-	1	3	3
UP 524	Urban Management and Governance	3	-	1	3	3
UP 531 - 537	Elective-I	3	-	1	3	3
UP 541 - 544	Elective-II	3	-	1	3	3
UP 525	Planning Studio-II		12	-	-	6
	Total	18	12			24

* **Note :** Professional internship of **6 Weeks** to be taken up in the semester break after second semester – office / agency finalized by the department.

M. Plan. (Housing) : Second Semester

Course no.	Subject	Periods per week		Theory		Credits
		L	T	No.	Duration	
HU521	Real Estate Planning	3	-	1	3	3
HU 522	Infrastructure planning	3	-	1	3	3
HU 523	Housing finance	3	-	1	3	3
HU 524	Planning and development of informal sector	3	-	1	3	3
HU 531-537	Elective - I	3	-	1	3	3
HU 541-544	Elective - II	3	-	1	3	3
HU 525	Planning Studio-II	-	12	-	-	6
	Total	18	12			24

* **Note** : Professional internship of **6 Weeks** to be taken up in the semester break after second semester – office / agency finalized by the department.

M. Plan. (Urban Planning) : Third Semester

Course no.	Subject	Periods per week	Theory paper		Credits
			No	Duration	
UP 611	Project Phase – I	6	-	-	18
UP 612	Training	-	-	-	2
	Total	6	-	-	20

M. Plan. (Housing) : Third Semester

Course no.	Subject	Periods per week	Theory paper		Credits
			No	Duration	
HU 611	Project Phase – I	6	-	-	18
HU 612	Training	-	-	-	2
	Total	6			20

M. Plan. (Urban Planning) : Fourth Semester

Course no	Subject	Periods per week	Theory paper		Credits
			No	Duration	
UP 621	Project Phase – II	6	-	-	22
	Total	6			22

M. Plan. (Housing) : Fourth Semester

Course no	Subject	Periods per week	Theory paper		Credits
			No	Duration	
HU621	Project Phase – II	6	-	-	22
	Total	6			22

List of Electives:

Elective I (Open Electives – Urban Planning and Housing)

Subject code	Subject name
UP 531 / HU 531	Ecology and Resource Development
UP 532 / HU 532	Environmental Planning
UP 533 / HU 533	Planning for Disaster prone areas
UP 534 / HU 534	Energy Efficient Planning
UP 535 / HU 535	Landscape Planning
UP 536 / HU 536	Rural Planning and Development
UP 537 / HU 537	Urban Design

Electives – II (Urban Planning)

Subject code	Subject name
UP 541	Real Estate Planning
UP 542	Urban Conservation
UP 543	Planning and Development of Informal sector
UP 544	Inclusive Planning
UP 545	Climate change and Human Settlement

Electives – II (Housing)

Subject code	Subject name
HU 541	Land-use and Transportation Planning
HU 542	Housing Design and Technology
HU 543	Materials and Technology
HU 544	Resettlement and Rehabilitation
HU 545	Infrastructure pricing and finance

Detailed Syllabus

First Semester (Integrated)

CM 511: Introduction to planning

Origins and growth of cities, effects of cultural influence on physical form; Human settlements as an expression of civilizations; Basic elements of the city; Concepts of space, time, scale of cities.

Town planning in ancient India; Medieval, renaissance, industrial and post industrial cities; City as a living spatial entity; a physical, social, economic and political entity; Dynamics of the growing city, City as a political statement: Contribution of individuals to planning thought: Lewis Mumford, Patrick Geddes, Peter Hall, etc.; impact of industrialization and urbanization, metropolis and megalopolis.

Theories: Concentric Zone Theory, Sector Theory, Multiple Nuclei Theory and other relevant theories; Land use and land value theory of William Alonso; Concepts: Garden City Concept; Emerging Planning Concepts: inclusive city, safe city, Green City, Shadow city, Sustainable City, Resilient City, Low Carbon City, Smart city etc., City of the future and future of the city .

Planning Models and Approaches: Advocacy and Pluralism in Planning; Systems approach to planning: rationalistic and incremental approaches, mixed scanning and middle range planning; Equity planning; Political Economy Model; Gravity Model, etc.

Orthodoxies of planning; Goal formulation, objective, scope, limitations
Sustainability and rationality in planning. Introduction to housing policies, housing need, demand and supply,

Contribution of housing to micro and macro economy, contribution to national wealth and GDP, housing taxation, national budgets, fiscal concessions, forward and backward linkages

Suggested readings

Regional planning for urban spaces
Urban and Regional planning reader
Housing: the essential foundation
New urban housing

AD Walk
Birch E, Glasson
Paul and Balchin
Hillery French

CM 512: Urban Economics and Sociology

Urban Economics

General introduction to principles of economics and public finance. Importance of economics in Urban Development and Planning.

Concepts of demand, supply, elasticity and consumer markets; concept of revenue costs; Economies of scale, economic and social costs, production and factor market; Different market structures and price determination; market failures, cost-benefit analysis, public sector pricing; Determinants of national income, consumption, investment, inflation, unemployment, capital budgeting, risk and uncertainty, and long-term investment planning. National five-year plans ; appraisal and economic development in relation to regional and urban development.

Introduction to Public Finance . Project development cost. Economic principles of land use pattern and land values. Economic base of cities and regions and their inter-dependency, Industrial location policies, any other economic activity base policies and their impact on urban development, Role of land economics in preparation of Urban Development plans. Relevant case studies of Urban Land Economics.

Economic growth and development, quality of life; Human development index, poverty and income distribution, employment and livelihood; Economic principles in land use planning; Policies and strategies in economic planning, balanced versus unbalanced growth, public sector dominance; changing economic policies, implications on land.

Urban Sociology

Sociological concepts and methods, man and environment relationships; Socio-cultural profile of Indian society and urban transformation; Tradition and modernity in the context of urban and rural settlements; Issues related to caste, age, sex, gender, health safety, and marginalized groups; Displacement, resettlement and rehabilitation due to compulsory land acquisition.

Social problems of slums and squatters communities, urban and rural social transformation and their impact on social life, safety, security; Crimes in urban areas and their spatial planning implications, social structure and spatial planning; Role of socio-cultural aspects on growth patterns of city and neighbourhood communities; Social planning and policy, and community participation; Marginalization and concepts of inclusive planning, and gender concerns in planning. Settlement Policy: National Commission on Urbanization, Rural Habitat Policy and experiences from developing countries regarding settlement structure, growth and spatial distribution.

Suggested readings

A brief introduction

Richard T Schaefer

Sociological principles

CN Shanker Rao

Modern Economic theory

HL Ahuja

Economics

Paul Sauruelson

CM 513 Planning Practices and legislation

Concepts of law, Sources of law (i.e. custom, legislation and precedent) meaning of terms of law, legislation, ordinance, bill, act, regulations and bye laws. benefits of statutory backing for schemes .Indian constitution, concept and contents.

Concepts of arbitration, Betterment Levy, Development Charges and Public participation in statutory planning process, Provisions regarding property right, Legislative competence of State and Central Government to enact town-planning legislation.

Significance of land development control – objectives and legal tools, building regulations and byelaws. Development Code,

Professional fees as per ITPI , CPWD and other agencies

Evolution of planning legislation, An overview of legal tools connected with urban development, Town and Country Planning Act, Urban Planning and Development Authorities, Act --objectives, contents, procedures for preparation, approvals and implementation of different plans. Introduction to law relating to slum clearance,

housing, landscape and traffic. Legislation relating to urban conservation and restoration, historical monuments, archaeological sites etc.

National Rehabilitation and Resettlement Policy (2007) - Social Impact mitigation;
National Environmental Policy (2006) – Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP)

Land Acquisition Act 1994 – Basic concepts, procedures for compulsory acquisition of property and determination of compensation.

Urban Land (Ceiling and Regulation) Act 1976 – objectives, contents and planning implications. Real Estate Bill 2016 etc.

Relevant National and State Acts

Case study - implications of acts at various planning levels

Suggested readings

Legislation and Planning practice
ITPI Reader

Namavati

CM 514: Planning Techniques

Types of Plans: master plan, development plan, structure plan, district plan , action area plan . Hierarchy of plans : Regional plan , sub-regional plan , sectoral plans and spatial plans .

Contents of base maps at various scales, notations – basic disciplines of maps: measurement of areas etc. Data requirement for urban and regional planning: sources of primary and secondary data, questionnaire design , measurement scale and their application , sampling techniques types of socio – economic surveys interviews , mailed questionnaires and observer participation.

Techniques of conducting surveys for land use , building use , density , structural condition of buildings , height of building , land utilization, physical features of land and information required for preparing various types of plans. Data requirement for various types of plans Tabulation of data, graphical presentation of data , techniques of graphical presentation of spatial data

Introduction to Remote Sensing – Aerial and Satellite, GIS , Spatial data and attributes Aerial photography as a tool for collection of data and preparation of maps, its application in planning and preparation for a project, orientation concept and methodology transformation and adjustment techniques. Basic principal and methods of photo interpretation and techniques of data collection through satellite data, Classification techniques using satellite data, Digital image processing, enhancement techniques in urban information extraction

Base map preparation and elementary data analysis using satellite data GIS techniques and their application in planning field.

Suggested readings

Applied geology
Concepts and techniques of GIS

Parbin singh and C Kesavilu,

CM 515 Quantitative Research Methods

Measures of Central Tendency and Dispersion - Arithmetic Mean; Weighted Mean; Geometric and Harmonic Mean; Median and Mode; Variance and Standard Deviation

Time Series and Forecasting - Trend Analysis - Cyclical Variation, Seasonal Variation, Irregular Variation; Various Methods in Time Series Analysis – Moving Average, Ratio to Trend, Link Relative and Residual

Factor Analysis - Principal Component Analysis

Probability Distribution and Sampling Distribution - Use of Expected Value in Decision Making; Binomial, Poisson and Normal Distribution (only application); Determination of Sample Size and Types of Sampling; Sampling Distribution (concept only); Design of Experiments (concept only)

Correlation and Regression - Two Variable versus Multiple Linear Regression; Simple and Multiple Correlation; Estimation of Parameters – The Method of Ordinary Least Squares; Hypothesis Testing, Goodness of Fit

Use of Excel Software for Analyzing Data; Applications of Features of Excel for statistical analysis; Introduction to other Statistical Analysis Software: e.g. SPSS

Network analysis: minimum path algorithm, Vogel's approximation method, link flows and inter zonal flows

Queuing methods, deterministic queuing model, probabilistics queuing model, single server FIFO system, multi server FIFO system

Simulation system concept, type of system, system modeling, nature and process of simulation, Monte Carlo simulation, computer application for simulation model, use of software for simulation process

Suggested readings

Quantity research book

CP Kothari

CM 516 Project formulation and Appraisal

The concept of projects with focus on physical urban projects, Importance of project formulation, appraisal and management; life cycle of project,

Planning techniques; Bar charts, Networks; CPM and PERT, resource leveling and allocation, time-cost trade off aspects.

Project formulation: definition, objectives; Stages of project formulation and their significance; Methodology for project identification and formulation; Estimation, Costing, Project Cash-flow forecasting and analysis. Feasibility studies and DPRs. Risk and Uncertainty.

Project Appraisal: Financial, economic, social, environmental, technological appraisal criteria. Funding and appraising agencies;

Project execution and implementation: Contracts and other methods of execution, Stages of implementation, Project monitoring.

Project evaluation: meaning, objectives, scope, stages, approach and steps

Suggested readings

Project formulation

Prasanna Chandra

CM 517 Geo-Informatics

Subject involves learning and application of basic techniques of GIS applications and remote sensing .

GIS Applications Coordinate system and geo-coding, vector data structure and algorithms, raster data structure and algorithms, data bases for GIS – concepts, error modeling and data uncertainty, decision making through GIS, constructing spatial data infrastructure and spatial information system; National Urban Information system.

Introduction to state of art gadgets and softwares .

GIS data processing (Digitization , topology building and metadata creation), Data structures and modeling , GIS Analysis (Buffer , proximity and overlay) , Decision making through GIS , Information systems (Land Information system , Urban Information system for various activity sectors)

Handling of a planning project of atleast zonal level.

CM 518 Planning Studio-I

Planning Studio aims to introduce theoretical and applied understanding of various aspects of Urban Planning.

Assignments / Exercises are for familiarisation of practical applications of norms and bye-laws . Understanding city and land-use character . Application of various techniques and theories at settlement level and developmental perspective of city planning.

A student is expected to understand the intricacies and interface between various variables of the site such as soil conditions, topography, environmental dimensions, location, spatial standards , leading to its application for a site planning exercise.

The area appreciation exercise is to enable the students to understand and contextualize of the location of the area in relation to the city, zone and area in which the particular place is situated. This is done in relation to the socio-economic, spatial and cultural characteristics of that city, zone, location, etc. The main purpose is to make the students appreciate the locational attributes of land parcels for future development in a city.

Appraisal and development of small and medium towns - to develop an approach/ framework for understanding the dynamics of various components of the city and how and what level interventions can be made .A group of students are expected to study a town in terms its present problems and issues and project a futuristic vision in terms of scenario building.

Second Semester (Urban Planning)

UP 521 City and Metropolitan Planning

Growth of cities and System of Cities, scale, complexity and its impact on national development, cities as engines of growth, cities as ecosystems, resources in cities. Inner city – issues and problems, approach to development.

Theories, concepts, approaches, strategies and tools, Policies and programmes at various levels, impact on metro and mega city development

City – Region Linkages City, fringe and the periphery - physical and functional linkages, peri-urban development.

Theories of city and metropolitan planning

Metro and Mega Cities: Problems and Issues Growth trends and processes, characteristics, problems, concepts and concerns of urban sustainability, issues related to diversity and unintended growth, economic, social and environmental sustainability, quality of life, inclusivity and equity, climate change, transit oriented development, participatory planning. Inner city – issues and problems, approach to development.

Urban Development Policies and Programmes Concepts, approaches, strategies and tools; Policies and programmes at various levels, impact on metro and mega city development.

Suggested readings

Regional planning for urban spaces
Urban and Regional planning
ITPI reader

AD Walk,
Birch E, Glasson

UP 522 / HU 522 Infrastructure Planning

Role of Infrastructure in Development, Elements of Infrastructure (physical, social, utilities and services); Basic definitions, concepts, significance and importance; Data required for provision and planning of urban networks and services; Resource analysis, provision of infrastructure, and land requirements; Principles of resource distribution in space; Types, hierarchical distribution of facilities, Access to facilities, provision and location criteria, Norms and standards, etc.

Planning and Management of Water, Sanitation and Storm Water Water – sources of water, treatment and storage, transportation and distribution, quality, networks, distribution losses, water harvesting, recycling and reuse, norms and standards of provision, institutional arrangements, planning provisions and management issues; Sanitation – points of generation, collection, treatment, disposal, norms and standards, grey water disposal, DEWATS, institutional arrangements, planning provisions and management issues. Storm water – rainfall data interpretation, points of water stagnation, system of natural drains, surface topography and soil characteristics, ground water replenishment, storm water collection and disposal, norms and standards, institutional arrangements, planning provisions and management issues;

Solid Waste Disposal and Management Basic principles, generation, characteristics, collection, disposal, management.

Fire and Electrification, and Social Infrastructure Planning for fire protection, services and space standards, location criteria; Planning for Education, health, civic,

cultural infrastructure and facilities for transport and other miscellaneous infrastructure services

Planning for Education, health, civic, cultural infrastructure and facilities for transport and other miscellaneous infrastructure services

UP 523 Traffic and transportation Planning

Evaluation of urban structure: Transport system, infrastructure and management, transport systems and their types, design and operating characteristics, urban road hierarchy, planning, and management criteria for road and junction improvements, arterial improvement techniques.

Transport survey and studies: study area definitions, survey and their types, sampling methods, survey techniques, programming and processing of travel data, analysis and interpretation of traffic studies.

Transportation Planning Process and analytical techniques: Techniques for urban structures analysis, Urban travel characteristics, urban transport interrelationship, transport planning process and modelling, scenario building and their analysis.

Traffic management, mass transit system: Problems and prospects, tramways, trolley buses, LRTS and MRTS operation characteristics. Review of existing traffic management schemes in Indian cities.

Transport and environment: Traffic noise, factor affecting noise statement measures, standards, air pollution standards, traffic safety, accident reporting and recording systems, factors affecting road safety, transport planning for different target groups. Norms and guidelines for highway landscape, street lighting types, standards and design considerations.

Economic evaluation: pricing and funding of transport services and systems, economic appraisal of highway and transport projects. Techniques for estimating direct and indirect road user costs and benefit value of time.

Intelligent transport system (ITS) its types and applications

Suggested readings

Introduction to transport planning	Michael J Bruton
Principal of Urban transport system planning	Hutchinson
Transport modeling	OrtuzerandWilliamson
Traffic and Transportation planning and engineering	Kadiyali and Khanna

UP 524 Urban Management and Governance

Introduction to Development Management and Urban Governance- Concept, approaches, components, interface with national goals and political economic system.

Urban Development Management Strategies, Tools and Techniques; organizations involved

Land and Real Estate Development Economic concepts of land, Land Pricing / valuation; Economic principles of land use; demand forecasting for land use: factors affecting land supply and demand; Land development methods, Supply Management, Demand side Management; Real estate markets, type of property development and its impact on supply and demand, method of development, environmental considerations.

Information System and Urban Reforms Spatial and Non - spatial information systems; Urban reforms and acts and policies.

Overview of Urban Governance Definition, concepts, components, government and governance, hierarchy and structure, forms of governance, process of inclusion and exclusion, 73rd and 74th Constitution Amendment Acts.

Institutions and Organizations , approaches to understanding organizations; types, structure and functions, their interface and conflicts, reach, and their effectiveness; Methods, process and evaluation; Present organizations and involved in urban governance.

Urban Local Governance and Participatory Processes System, structure, functions, powers, process and resource, performance, interface with NGO's, other agencies. Stakeholders' participation, roles and responsibilities, access to government by various stakeholders. Public participation : its role and models .

UP 531 – UP 537 / HU 531 – HU 537 Elective – I (Open Electives)

UP 531 / HU 531 Ecology and Resource Development

Introduction to Ecology – Concepts and Theories, Major ecosystems of the Evolution of Ecology, Man and ecosphere. Components of nature and some basic concepts, process of ecology, flow of material, water, energy, invasion, succession, prediction, regulatory forces, adaptation, tropic levels, food chains, food web, ecological pyramids, Urban Ecology -Evolution and Significance, Environmental impact assessment –Methods and appraisal.

Ecosystem and their relevance to environment, resource and human settlements. Modifications in natural environment, causes and consequences. Impact of advance agriculture –methods, urbanization and industrialization on nature. Urban development and environment. Environmental Pollution, types, sources, remedies.

Urban ecosystem approach, evolution and significance. Introduction to qualitative ecology. Ecological approach of planning at different levels-Principles and procedures. Identification of ecological parameters for planning at different levels, site planning, settlement planning, regional planning. Data needs, formats for data collection. Types of analysis required to evolve ecological parameters. Limits to growth , Carrying capacity, suitability analysis

Ecological awareness in India, traditional indigenous methods, contemporary trends. Endangerments and resources, definition and classification according to different criteria and use, renewable and non-renewable etc.

Space bound and flow resources, preparation and analysis of resource inventories and resource matrices. Fitness of resources, examples of transfer from one resource to another in history in different parts of world. Development utilisation and conservation of resources, resource planning, integrated resource planning approach.

Resource regions, their problems and potentials. Resource management, traditional and contemporary approaches. Resource development in India, some selected areas (energy, water, manpower. etc.).Resource management in view of Climate change.

Suggested readings

Ecology and Resource Management

Urban Pattern

The city los angelsand urban theory

City shaped urban pattern meaning through history

Kenneth E. F. Watt

Arthur Gallion

Allenj scot

Spirokostof

UP 532 / HU 532 Environmental Planning

Introduction to Environmental planning, aims, objectives and Implementation.
Introduction to State and National policies.

Environment planning theories and their applications, Issues related to Environment and ecology like, de - forestation, soil erosion, water logging and soil salinization. Scarcity of natural resources and exploitation of them for development, Planning for optimizing the use of natural resources, methods used like water harvesting, waste land management and minimizing use of fossil fuel etc.

Environmental aspects with respect to tribal and rural areas. Problems of air and water pollution, industrial pollution and solid waste management in urban areas.

Frame work, statement prediction and assessment of impacts of air, water, noise, cultural and socio-economic environment. Methods of impact analysis, public participation, Environmental impact assessment and statements.

Environmental protection international and national agencies and legislation, Environmental policies for various geographical regions. Environment Impact Assessment.

Climate change and settlement planning

Suggested readings

NEPA and Environmental Planning: tools, Techniques and approaches

Charles H

Eccleston

UP 533 / HU 533 Planning for Disaster prone areas

Natural Disasters, Meaning, factors and significance. Characteristic, causes and effects of natural hazards viz. Drought, earthquake, flood and other hazards, ,Disaster profile of India- regional and seasonal

Disaster Preparedness and Response, Scope and objectives of disaster mitigation

Preparedness and response, Prerequisite for preparedness planning, action plans and procedure, models and checklists

Disaster response planning, roles and responsibilities of various agencies

Emergency operation support and management

Planning for Disaster Prone Areas, Planning requisites for disaster prone areas and preventive measures, Vulnerability analysis

Land use planning and regulations: Temporary settlements and communications
Development planning tasks at the pre-disaster and post- disaster stages .Disaster and housing, Shelter typology for different hazardous situations. Housing design and planning for pre and post disaster. Traditional methods of planning and construction
Modification of unsafe housing and disaster resistant structures

Emergency Camps and Shelter, Emergency camps, Vulnerability and low cost dwellings. Temporary and emergency shelter design at post disaster stage, Shelter components, materials, structures and erection

Infrastructure and Management: Food, health care and infrastructure requirements

Movement, transport and communication, Emergency networks, communications and management, Settlement management policy for disaster prone areas, Training and education requirement.

Change pattern of climate and resilience

Suggested readings

Planning for Disaster

William G. Ramroth

UP 534 / HU 534 Energy Efficient Planning

Energy and Human Settlements. Innovation in technology applications and energy use. Concepts and theory of design and operation of urban services and network systems water supply, sewage disposal, drainage refuse collection, recycling and disposal, electricity network, telephone network, health care and education, police protection and fire fighting, general welfare. Operational planning for emergency evacuation in urban areas.

Identification of energy system parameters for planning at different levels-site planning, settlement planning, regional planning, data needs, formats for data collection. Types of analysis required to evolve them. Urban Energy system models and their applications.

National and state energy systems, environmental policies, acts. The network and service systems- components, interrelationship requirements and need of appropriate technology. Effects of density, land use and urban structure on design of network and service systems.

Cost recovery, economics of urban service systems and networks.

Suggested readings

Energy Efficient planning

Efraimgil

Energy Planning and Urban form

Susan E. Owens

UP 535 / HU 535 Landscape Planning

The practice of landscape planning, the landscape planner and the various agencies, landscape design and planning procedures, implementation and professional liabilities.

Data analysis and inferences: Topography, geology, hydrology, vegetation, ecology, neighbourhood and culture visual, aesthetics.

Development controls, government planning, zoning, legal constraints, environmental impact assessment.

Landform, land drainage and equipments, decisive factors, landform planning and procedures, slope protections..

Urban water bodies, coastal works, planting concepts, reclamation of wastes, advance planning for wastes, reclamation of derelict/ waste water conservation, harvesting, forestry, urban forestry, historical sites and monuments.

Suggested readings

Site planning

Kevin Lynch

Landscape planning

John O Simonds

UP 536 Rural Planning and Development

Mutual dependence between urban and rural areas, between industries and agriculture, characteristics of symbiotic, development in India in this context.

Levels of living of rural people – trends and development, difference in level of development between various regions within India and different socio – economic groups.

National planning and rural development, concept of planning for rural settlements. Regional development and urban rural partnership, related input and infrastructure development, agriculture development, allied activities and pattern of rural linkage, communication and marketing facilities, community development, instructions and delivery of social services.

Rural settlement, typology, structure, spatial significance in metro regions and interior areas. Planning principles for village and community norms.

Rural reconstruction, basic need and rural sanitation, water supply, hygiene and drainage, technology transfer and options. Area, District and Block level development planning and implementation, public participation in rural development process, role of voluntary organizations.

Rural energy issues, renewable and alternative resources of energy, ecological and environment considerations in rural development and village planning.

Models and theories of rural planning , policies and practices at global level, provisions in national and state five year plans and city master plans etc. Action programme initiated at national and global level. Housing agencies and co-operative feasibility and implementation of existing policies and action programme

Projections and forecasting

Suggested readings

Rural planning and development

Thomas Adams

Micro level rural planning: principal, methods and case study

RP Mishra

UP 537 / HU 537 Urban Design

Introduction to various philosophies , Concepts and Theories of Urban Design

Contribution of different philosophers to the field of Urban Design Need for urban design. Meaning, scope and purpose of Urban design. The relationship between Urban Design and Urban Planning. methodological approaches to spatial analysis of the city with an opportunity to analyze, explore and innovate new methods and techniques for understanding our cities. Determinants and components of urban form.

Morphological, Temporal , Social , Functional , Perceptual and Visual dimensions of urban design . Growth, scale and form of Indian cities

Principles of Urban design and criteria.

Urban massing and Scale (intimate, urban and monumental, human scale and generic scale) and Spaces (hierarchy and nature, effect of light, sense of enclosure).

Introduction to analytical techniques in urban design.

Survey techniques in urban design (inventories and recording of findings, types of survey). Modern techniques and emerging approaches to urban design.

Road forms and townscape (serial and radial road forms, speed calming techniques, principles of streetscape, townscape and pedestrian design).

Principles of Urban Conservation (legal, economic, organization and management issues).

Principles of Urban Renewal (purpose, economic and planning issues).

Urban design regulations and control, the comprehensive role of urban design in town planning process

Suggested readings

Urban Design

Paul D. Spreiregen

UP 541 – UP 545 Elective – II

UP 541 Real Estate Planning

Introduction to real estate, definition, principles of real estate value concepts, methods of valuation, introduction to real property ownership, leasing property succession, methods of sale/ purchase, title search,

Investment and Laws Real estate investment analysis and portfolio management, foreign direct investment (FDI), role of NRIs and PIOs in the investment market, marketing and brokerage; Introduction to various laws related to real estate.

Real Estate Project Formulation Real estate project formulation, real estate development process, asset management, property insurance, real estate case studies, taxation and fiscal incentives, government policies and industry organization, public-private partnerships and JV'S, rating, risk assessment.

Housing Markets Concepts and definitions, housing market, area, the purpose and nature of housing market studies; factors affecting housing prices, housing market behavior, estimation of housing need, housing demand and identification of housing stress, factors affecting local housing market, housing demand and supply market process, housing search residential mobility and filtering causes and consequences, policy influence on housing market, the formal and informal housing markets and their impact on urban poor, public, Co-operative and private sector housing market, process and supply institutional frame work.

UP 542 Urban conservation

Different methods of restorations, Conservation its meaning and importance, historical background of conservation, Theories of conservation, Conservation charters, Role of different international and national agencies, Listing and documentation., Acts and Byelaws. Need of conserving the heritage sites in urban context. Tools and

Techniques of conservation, Urban Conservation Management with emphasis on Urban Renewal and Urban re development. Gentrification and conservation .
Case studies in Conservation of heritage / other sensitive sites

Suggested readings

Urban conservation
Town Design

Nahoumcuhen
Frederick **Gibberd**

UP 543 Planning and development of informal sector

Introduction to informal sector housing. Housing situation and shortage, quantum of problem at global and National levels, Urbanization and poverty. Internal and external attributes to informal sector, Growth process, Role of informal sector in city development

Socio economic and environmental aspects in informal sector, Socio cultural perspective, physical characteristics etc. study of the parameters of quality of life. Models and theories, Policies and practices at global level, Provisions in National and State

Five Year Plan and city master plans, etc. Action programmes initiated at global and National Levels. Housing agencies and co-operatives Feasibility and implementation of existing policies and action programmes.

Projections and forecasting, Techniques for plan formulation, Plan preparation and formulation at various levels, Sustainable planning, Estimates for plan proposal etc.
NOTE: Sessional work shall consist of case studies / analytical reports / seminars and term paper.

Suggested readings

Urban Informal sector in Asia

ILO publications

UP 544 Inclusive Urban Planning

Understanding Inclusive Planning Definitions and components

Stakeholders Profile and Needs, Access to Shelter, Services and Livelihoods Urban Poor, Informal Sector, Gender, Children, Elderly, Disabled, Displaced people, etc.; Slums - dimensions, causative factors, determinants, location characteristics of settlements; Informal sector - growth, characteristics, functions, economic contributions, linkages with formal sector, impact on Urban Development

Participatory Planning Process and Policies, Programmes and Legislation Methods, role of stakeholders (including civil society organizations), etc.; Related Acts, Five year plans, policies and programmes at various levels.

Planning interventions Inclusive zoning, development and building regulations, Slum Improvement

UP 545 : Climate change and Human settlements

Understanding Climate Change: Greenhouse gases, Anthropogenic causes, Carbon Cycle, Global Warming, Inventory of GHGs, Urban Heat Islands
International and National Efforts: United Nations Framework Convention on Climate Change (UNFCCC), Conference of Parties, Kyoto Protocol, Intergovernmental Panel on

Climate Change (IPCC), National Communication Process, Indian Network of Climate Change Assessment, Global Environment Facility (GEF), Clean Development Mechanism (CDM)

Role of Human Settlements: Contribution to GHGs, Sectoral Contributions, Mitigation Possibilities, Low Carbon Settlements

Impacts of Climate Change: Climate as forcing Variable, Locational Attributes, Sensitivity and Vulnerability of Different Sectors, Extreme Events and their Effects
Adaptation Strategies: Resilience, Threshold Variables, Risk Avoidance, Risk Mitigation, Risk Coverage, Mitigation and Adaptation Linkage, Case Studies of Adaptation Approaches

Climate Change – Implications for India’s Water Resources: Impact of Global Warming on India’s Climate, Impact of Global Warming on Floods and Droughts, Impact of Floods and Droughts on Human Society and Development, Potential of Surface Water Sources, Ground Water Potentials, Potential of the Monsoons to Supplement Water Supply, Future Demand and Supply of Water, Long-Term Water Supply Prospects, Coping with Climate Change and Adaptation

Climate Change – Settlements: An introduction to the Earth’s Climate System and Climatic Zones as Basis for Human Activity and Settlements, The Development of Society in Relation to the Local Climatic and Topographic Conditions, Resources Availability (Food, Building Material, Energy), Technical Skills and the Societal Framework, The Conditions for Development, Evolution and Collapse of Civilizations.

An Assessment of Population Development and its Implications on Settlements, Buildings and Resource Consumption with Particular Focus on Energy Consumption

Suggested readings

Climate Change – Causes, Effects and Solutions	Hardy T John, Wiley
Climate Change – Observed Impacts on Planet Earth	Letcher M Trevor
Climate Change 2007: Impacts, Adaptation and Vulnerability	
Contribution of Working Group-II to the Fourth Assessment Report of the IPCC	M. Parry, O. Canziani, J. Palutikovf, P. van der Linden and C. Hanson

UP 526 Planning Studio-II

The exercise pertains to medium towns / large cities / New towns for preparation of development plan. Initial study involves understanding of the exercise through theories, case studies, awareness of relevant norms and standards through extensive literature search. Students are required to prepare a comprehensive list of required data and identify probable sources before making a field visit to the case study town/city.

Students are encouraged to translate learning from the core and elective subjects using knowledge of legal framework and practices for plan preparation and implementation. They are expected to analyze the data collected and give proposals and recommendations for planned development of the city. The submission of the exercise has to be submitted in the form of maps, illustrations and report.

Additionally, scope of the work may include sustainable development plans for sector specific themes such as tourism, conservation, re-densification , industrial corridor , SEZs etc.

Second Semester (Housing)

UP 521 Real Estate Planning

Introduction to real estate, definition, principles of real estate value concepts, methods of valuation, introduction to real property ownership, leasing property succession, methods of sale/ purchase, title search,

Investment and Laws Real estate investment analysis and portfolio management, foreign direct investment (FDI), role of NRIs and PIOs in the investment market, marketing and brokerage; Introduction to various laws related to real estate.

Real Estate Project Formulation Real estate project formulation, real estate development process, asset management, property insurance, real estate case studies, taxation and fiscal incentives, government policies and industry organization, public-private partnerships and JV'S, rating, risk assessment.

Housing Markets Concepts and definitions, housing market, area, the purpose and nature of housing market studies; factors affecting housing prices, housing market behavior, estimation of housing need, housing demand and identification of housing stress, factors affecting local housing market, housing demand and supply market process, housing search residential mobility and filtering causes and consequences, policy influence on housing market, the formal and informal housing markets and their impact on urban poor, public, Co-operative and private sector housing market, process and supply institutional frame work.

UP 522 / HU 522 Infrastructure Planning

Role of Infrastructure in Development, Elements of Infrastructure (physical, social, utilities and services); Basic definitions, concepts, significance and importance; Data required for provision and planning of urban networks and services; Resource analysis, provision of infrastructure, and land requirements; Principles of resource distribution in space; Types, hierarchical distribution of facilities, Access to facilities, provision and location criteria, Norms and standards, etc.

Planning and Management of Water, Sanitation and Storm Water Water – sources of water, treatment and storage, transportation and distribution, quality, networks, distribution losses, water harvesting, recycling and reuse, norms and standards of provision, institutional arrangements, planning provisions and management issues; Sanitation – points of generation, collection, treatment, disposal, norms and standards, grey water disposal, DEWATS, institutional arrangements, planning provisions and management issues. Storm water – rainfall data interpretation, points of water stagnation, system of natural drains, surface topography and soil characteristics, ground water replenishment, storm water collection and disposal, norms and standards, institutional arrangements, planning provisions and management issues;

Solid Waste Disposal and Management, Basic principles, generation, characteristics, collection, disposal, management.

Fire and Electrification, and Social Infrastructure Planning for fire protection, services and space standards, location criteria; Planning for Education, health, civic, cultural infrastructure and facilities for transport and other miscellaneous infrastructure services

Planning for Education, health, civic, cultural infrastructure and facilities for transport and other miscellaneous infrastructure services

HU 523 Housing Finance

Financial environment at the national level, financial system and regulation, Characteristics of housing finance, policy for housing finance in national plans,

Sources of finance, public – private sector investment in housing, finance in urban and rural sector implications of long-term and short term financing, fiscal aspects of subsidizing public and private housing, housing finance requirements of economically weaker sections; Methods of financing, specialized finance institutions, mortgage financing systems, non-institutional financing, present trend in housing finance in India and in other countries, fiscal incentives in annual budgets, direct and indirect tax proposals.

Role of HUDCO, NHB, HFIs, various international donor/financing agencies, micro finance institutions, rural housing finance

Financial feasibility of projects, various financial instruments, concepts of IRR and NPV, basics of cash flow analysis, financial structuring of projects, preparation of DPR

HU 524 Planning and development of informal sector

Emergence and growth of Informal Housing in third world cities and formal regulatory framework Diversity of housing needs of urban poor and informal housing options pavement dwelling, squatting, illegal land-subdivision, inner-city organic housing, and urban villages. Causes of growth and perpetuation and impacts of illegality.

Linkages of informal economy-supportive policies of settlement upgrading and options of tenure security. Impacts and obstacles to regularization. Integrated, participatory improvement approaches. Inclusive and equitable planning

Process of slum formation, causes and consequences, approaches to tackle the challenge of slums, relocation, rehabilitation, in-situ upgradation, etc. Role of NGO's and CBO's in the improvement process; Dimensions of poverty and its manifestation in the housing sector, indicators, programmes specifically targeted towards slums and the urban poor, shelterless population.

Suggested readings

Urban Informal sector in Asia

ILO publications

UP 531 – UP 537 / HU 531 – HU 537 Elective – I (Open Electives)

Detailed syllabus with Urban Planning (second Semester)

HU 541 – HU 545 Elective – II

HU 541 Land use and transportation Planning

Evaluation of urban structure: Transport system, infrastructure and management, transport systems and their types, design and operating characteristics, urban road

hierarchy, planning, and management criteria for road and junction improvements, arterial improvement techniques.

Transport survey and studies: study area definitions, survey and their types, sampling methods, survey techniques, programming and processing of travel data, analysis and interpretation of traffic studies.

Transportation Planning Process and analytical techniques: Techniques for urban structures analysis, Urban travel characteristics, urban transport interrelationship, transport planning process and modeling, scenario building and their analysis. Traffic management, mass transit system: Problems and prospects, tramways, trolley buses, LRTS and MRTS operation characteristics. Review of existing traffic management schemes in Indian cities.

Transport and environment: Traffic noise, factor affecting noise statement measures, standards, air pollution standards, traffic safety, accident reporting and recording systems, factors affecting road safety, transport planning for different target groups. Norms and guidelines for highway landscape, street lighting types, standards and design considerations.

Economics evaluation: pricing and funding of transport services and systems, economic appraisal of highway and transport projects. Techniques for estimating direct and indirect road user costs and benefit value of time. Intelligent transport system (ITS) and their types and applications

Suggested readings

Introduction to transport planning

Principal of Urban transport system planning

Transport modeling

Traffic and Transportation planning and engineering

Michael J Bruton

Hutchinson

OrtuzerandWilliamson

Khanna and Kadiyali

HU 542 Housing Design and Technology

Building materials traditional and conventional, low cost materials, significance of technology for housing development, conventional technologies and modern technologies, appropriate technology, technology for housing in the context of housing development in India and the third world.

Concept of prefabrication, industrialization and system building, various open and closed systems, choice of various systems of building, concept of intelligent building; Organization of the construction industry in India-Significance of Housing construction industry, its characteristics and role of various factors involved; Small scale enterprises in the housing construction industry-building material manufacturers, sellers and small contractors. Significance of resources and manpower in housing construction, need for imparting in housing building, concept of NrimithiKendras.

Cost reducing techniques, environmental friendly technologies, role of technology in housing projects formulation-cost time and other implications, Emerging technological perspectives for house construction, infrastructure and housing area planning.

Role and significance of Physical infrastructure in housing development, characteristics of various components of physical planning and design of infrastructure, appropriate technology for infrastructure development, rain-water harvesting, use of

solar energy, wind energy and other appropriate technologies; Role of BMTPC and other organizations in promotion of new and alternative technologies.

HU 543 Material and Technology

Introduction to Materials and Technology Building materials traditional and conventional, low cost materials, significance of technology for housing development, conventional technologies and modern technologies, appropriate technology, technology for housing in the context of housing development in India and the third world.

Prefabrication and Industrialization and Construction Industry Concept of prefabrication, industrialization and system building, various open and closed systems, choice of various systems of building, concept of intelligent building; Organization of the construction industry in India-Significance of Housing construction industry, its characteristics and role of various factors involved; Small scale enterprises in the housing construction industry-building material manufacturers, sellers and small contractors. Significance of resources and manpower in housing construction, need for imparting in housing building, concept of Nrimithi Kendras.

Cost Optimization Cost reducing techniques, environmental friendly technologies, role of technology in housing projects formulation-cost time and other implications, Emerging technological perspectives for house construction, infrastructure and housing area planning.

Alternative Technologies Role and significance of Physical infrastructure in housing development, characteristics of various components of physical planning and design of infrastructure, appropriate technology for infrastructure development, rain-water harvesting, use of solar energy, wind energy and other appropriate technologies; Role of BMTPC and other organizations in promotion of new and alternative technologies.

HU 544 Resettlement and Rehabilitation

Land Development and Resultant Resettlement Land Acquisition Models and Practices in India and elsewhere for projects. Compulsory Acquisition, land sharing and adjustment models, land pooling, negotiated land acquisition. Development induced relocation – voluntary and involuntary resettlement; Resettlement and Rehabilitation Policies. Policies of multi-lateral / bilateral funding institutions: World Bank, Asian Development Bank Policies, National Policy on Resettlement and Rehabilitation and State Policies on R and R and Sector Specific Policies in large projects such as Multi-Purpose Dam Projects, Mining projects, Highway projects, SEZ, etc.

Impact of Resettlement and Rehabilitation (R and R) Plan Poverty and Social Impact Assessment for Development projects: Linear Projects (Roads, railways, etc), vis-à-vis non-linear projects (Township / industrial area development, dams, forests). Impact on vulnerable and indigenous groups: Project Affected People and Project Affected Assets, Impact on Women and Children, Gender Action Plans. Resettlement Plan: Context, content, structure, principles and practices: Economic, social and physical implications of resettlement and rehabilitation. Resettlement options and strategies, Self-relocation and project facilitated relocation; Case studies in Resettlement and Rehabilitation in Development Sectors: Mining, Highways, Power,

industrial and township development. Flood affected areas and other infrastructure projects such as Mumbai Transport Project.

Rehabilitation Policies, Assessing the livelihood losses, livelihood impact assessment and skill mapping surveys, income restoration strategies, training strategy for skill up gradation and meeting demands for shifting economic profiles in the development area.

Participation as an Important Tool for Resettlement and Rehabilitation Use of Participatory tools for Resettlement Planning. Institutional arrangements for R and R – Role of NGOs / CBOs and other local, state, national and international organizations in resettlement and rehabilitation, Monitoring and Evaluation of R and R interventions.

HU 545 Infrastructure Pricing and Financing

Introduction to Public Finance Meaning and scope of public finance; Sources of public revenue: their nature, scope and limitations; Public borrowings: its objectives, form and scope; Public debt: importance, scope and problems; Public financial institutions: their role and contribution in infrastructure development; Deficit financing; principles and problems of federal finance; Central and state governments financial relations; Central Finance Commission: its role and recommendations.

Private Finance Meaning, scope and forms of private finance; Private debt and market borrowings: objectives scope and related problems; Loans from banks and financial institutions: prospects and limitations.

Financing and Cost Components of Infrastructure Financing infrastructure development: tax and non-tax revenue of Development Agencies; Loans and grants from financial institutions; Remuneration projects; Making infrastructure development self financing; Privatization and role of private finance in infrastructure development, Public – Private Partnership (PPP). Cost components of infrastructure development; Socio-economic cost benefit analysis; Cost recovery and affordability; Subsidy and cross-subsidy; Principles of maximum social advantage. Pricing of infrastructure – its rationale and parameter/components; Principles of determining cost and price of infrastructure development to be charged from consumers/users.

Financial Resource and Local Governments Financial resources of local bodies – their nature, scope and limitations; Infrastructure development expenditure of Local Governments; Causes and effects of poor finance health of Municipal Bodies; Various measures to augment financial resources of local bodies; State Finance Commission: its role and recommendations

HU 525 Planning Studio – II

The studio intend to evolve comprehensive housing development strategy for the selected city by studying city level and housing subsystem level aspects and estimating housing shortage; projecting housing need and demand and preparing alternative scenarios for housing development. The study need to be carried out mainly through secondary sources.

A comprehensive large scale housing proposal to be developed for selected city based on socio-economic and demographic characteristics. Emphasis on project conceptualisation, feasibility report, physical planning proposal, details of services and project management schedules be worked out.

Third Semester (Urban Planning and Housing)

UP 611/ HU 611 Project Phase – I

The intention of this subject is to develop the research aptitude and skill of report writing. Selection of the topic has to be done as per department's policy .The work shall be done on the selected topic related to the field of Urban Planning. Submission till the stage of literature review findings and case study with inferences and conclusions has to be done

02 Seminar papers , broadly on the basis of thesis topic , are to be prepared and presented.

UP 612/ HU 612 Training

Professional internship of 6 Weeks to be taken up in the semester break after second semester – office / agency finalized by the department.

Submission in the form of the report and presentation is to be done. Intermediate submissions as directed.

Fourth Semester (Urban Planning and Housing)

UP 621 Project Phase – II

Each student is required to prepare a thesis on a subject concerning Urban Development and Planning as approved by the Department of Architecture and Planning.

The objective of a thesis is to provide an opportunity to each student to undertake in depth and original study and research in the field of his/her interest .The thesis also provides an opportunity to synthesize the knowledge and skills, acquired through the learning of various theories and practices during the previous semesters.

The subject of thesis may be conceptual, historical, empirical, analytical, and comparative or in any other area related to urban development and planning which shall be approved by the department. Thesis has to primarily have a physical plan proposal / application.

Each candidate will prepare the thesis in consultation with a guide as allotted by the department.

HU 621: Project Phase – II

Each student is required to prepare a thesis on a subject concerning Housing or Urban Planning (major objective of housing) as approved by the Department of Architecture and Planning.

The objective of a thesis is to provide an opportunity to each student to undertake in depth and original study and research in the field of his/her interest .The thesis also provides an opportunity to synthesize the knowledge and skills, acquired through the learning of various theories and practices during the previous semesters.

The subject of thesis may be conceptual, historical, analytical, and comparative or in any other area related to urban development and planning which shall be approved by the department. Thesis has to primarily have a physical plan proposal / application.

Each candidate will prepare the thesis in consultation with a guide as allotted by the department.