

**Scheme of Examination and Syllabus**

**For**

**MASTER OF URBAN DEVELOPMENT PLANNING**

**July 2006**

**Department of Architecture & Planning  
Maulana Azad National Institute of Technology  
Bhopal 462007**

Scheme of examination  
**MASTERS OF URBAN DEVELOPMENT AND PLANNING (FULL TIME)**

Course No	Subject	Periods per week		No. and Duration of Theory paper		Credits		Total Credits	
		L	T/S	No	Hrs	L	T/S		
<b>I Semester (Full-Time)</b>									
UDP-101	Statistics and Demography	3	1	1	3	3	1	4	
UDP-102	Planning Techniques	3	1	1	3	3	1	4	
UDP-103	Evolution and Planning Thought	3	1	1	3	3	1	4	
UDP-104	Traffic and Transportation Planning	3	1	1	3	3	1	4	
UDP-105	Housing and Community Planning	3	1	1	3	3	1	4	
UDP-141	Planning Studio-I	--	3	--	--	--	3	3	
UDP-142	Planning Studio Seminar- I	--	--	--	--	--	2	2	
	<b>Total</b>	<b>15</b>	<b>08</b>	--	--	<b>15</b>	<b>10</b>	<b>25</b>	
<b>II Semester (Full-Time)</b>									
		<b>L</b>	<b>T/S</b>	<b>No</b>	<b>Hrs</b>	<b>L</b>	<b>T/S</b>		
UDP-151	City and Regional Planning	3	1	1	3	3	1	4	
UDP-152	Land Economics and Management	3	1	1	3	3	1	4	
UDP-153	Project Management	3	1	1	3	3	1	4	
UDP-161	Elective-I Ecology & Resource Development	3	1	1	3	3	1	4	
UDP-162	Ancient Indian Planning								
UDP-163	Environmental Planning								
UDP-164	Elective-II Landscape Planning	3	1	1	3	3	1	4	
UDP-165	Energy Efficient Environment Services								
UDP-166	Urban Energy Systems								
UDP - 167	Rural planning & development								
UDP-191	Planning Studio-II	--	3	--	--	--	3	5	
UDP-192	Planning Studio Seminar- II	--	--	--	--	--	2	2	
	<b>Total</b>	<b>15</b>	<b>08</b>	--	--	<b>15</b>	<b>10</b>	<b>25</b>	
<b>III Semester (Full-Time)</b>									
		<b>L</b>	<b>T/S</b>	<b>No</b>	<b>Hrs</b>	<b>L</b>	<b>T/S</b>		
UDP-201	Remote Sensing And GIS	3	1	1	3	3	1	4	
UDP-202	Planning Legislation and Professional Practices	3	1	1	3	3	1	4	
UDP-211	Elective-III Urban Governance & Management	3	1	1	3	3	1	4	
UDP-212	Planning of Disaster prone areas								
UDP-213	Urban Conservation								
UDP-214	Planning & Development of Informal sector								
UDP-241	Planning Studio-III (Project Formulation)	--	2	--	--	--	2	2	
UDP-242	Planning Studio Seminar- III	--	--	--	--	--	3	3	
UDP-243	Dissertation (Pre Thesis Work)	--	--	--	--	--	8	8	
	<b>Total</b>	<b>09</b>	<b>05</b>	--	--	<b>9</b>	<b>16</b>	<b>25</b>	
<b>IV Semester (Full-Time)</b>									
UDP-298	Thesis Project	--	--	-	--	-	--	25	25
	<b>Total</b>	--	--	-	--	-	--	<b>25</b>	<b>25</b>

- Eight weeks professional training during semester break after second semester.
- Regular seminars for Dissertation ( UDP – 243)

Scheme of examination  
**MASTER OF URBAN DEVELOPMENT AND PLANNING (PART TIME)**

Course No	Subject	Periods per week		No. and Duration of Theory paper		Credits		Total Credits	
		L	T/S	No	Hrs	L	T/S		
<b>I Semester (Part-Time)</b>									
UDP-101	Statistics and Demography	3	1	1	3	3	1	4	
UDP-102	Planning Techniques	3	1	1	3	3	1	4	
UDP-103	Evolution and Planning Thought	3	1	1	3	3	1	4	
	<b>Total</b>	<b>09</b>	<b>03</b>			<b>9</b>	<b>3</b>	<b>12</b>	
<b>II Semester (Part-Time)</b>									
UDP-151	City and Regional Planning	3	1	1	3	3	1	4	
UDP-152	Land Economics and Management	3	1	1	3	3	1	4	
UDP-153	Project Management	3	1	1	3	3	1	4	
	<b>Total</b>	<b>09</b>	<b>03</b>			<b>9</b>	<b>3</b>	<b>12</b>	
<b>III Semester (Part-Time)</b>									
		<b>L</b>	<b>T/S</b>	<b>No</b>	<b>Hrs</b>	<b>L</b>	<b>T/S</b>		
UDP-104	Traffic and Transportation Planning	3	1	1	3	3	1	4	
UDP-105	Housing and Community Planning	3	1	1	3	3	1	4	
UDP-141	Planning Studio-I	--	3	--	--	--	3	3	
UDP-142	Planning Studio Seminar- I	--	--	--	--	--	2	2	
	<b>Total</b>	<b>06</b>	<b>05</b>			<b>6</b>	<b>7</b>	<b>13</b>	
<b>IV Semester (Part-Time)</b>									
UDP-161	Elective-I Ecology & Resource Development	3	1	1	3	3	1	4	
UDP-162	Ancient Indian Planning								
UDP-163	Environmental Planning								
UDP-164	Elective-II Landscape Planning	3	1	1	3	3	1	4	
UDP-165	Energy Efficient Environment Services								
UDP-166	Urban Energy Systems								
UDP-167	Rural planning & development								
UDP-191	Planning Studio-II	--	3	--	--	--	3	5	
UDP-192	Planning Studio Seminar- II	--	--	--	--	--	2	2	
	<b>Total</b>	<b>06</b>	<b>05</b>			<b>6</b>	<b>7</b>	<b>13</b>	
<b>V Semester (Part-Time)</b>									
		<b>L</b>	<b>T/S</b>	<b>No</b>	<b>Hrs</b>	<b>L</b>	<b>T/S</b>		
UDP-201	Remote Sensing And GIS	3	1	1	3	3	1	4	
UDP-202	Planning Legislation and Professional Practices	3	1	1	3	3	1	4	
UDP-211	Elective-III Urban Governance & Management	3	1	1	3	3	1	4	
UDP-212	Planning of Disaster prone areas								
UDP-213	Urban Conservation								
UDP-214	Planning & Development of Informal sector								
UDP-241	Planning Studio-III (Project Formulation)	--	2	--	--	--	2	2	
UDP-242	Planning Studio Seminar- III	--	--	--	--	--	3	3	
UDP-243	Dissertation (Pre Thesis Work)	--	--	--	--	--	8	10	
	<b>Total</b>	<b>09</b>	<b>05</b>			<b>09</b>	<b>16</b>	<b>25</b>	
<b>VI Semester (Part-Time)</b>									
UDP-298	Thesis Project	--	--	--	--	--	--	25	25
	<b>Total</b>	--	--	--	--	--	--	<b>25</b>	<b>25</b>

- Eight weeks professional training during semester break after second semester.
- Regular seminars for Dissertation ( UDP – 243)

## **Introduction**

Cultural traditions, economic and political forces shape cities, which in turn has social implications. Planning profession should be looked upon as enabling what is needed for the smooth functioning of society

## **About the programme**

The course gives broad platform to graduates from different disciplines like architecture, civil, geography, economics and sociology to take up planning profession. This also gives faculty to develop rich programme keeping in view wide range of input with varied specialization.

The core of course ensures that all students are exposed to fundamental activities and concerns of planning. The course introduces the study of analytical and imperative views of human settlement. Understanding of the legal, political and organizational context of planning, which ensures that students will be able to function effectively, and creatively in the profession for the well being of society.

Each student is given a wide range of electives, so that he / she can develop appropriate expertise along with core subjects. Professional Training prepares the student to face the demand and problems of market.

Different components of the programme are:

- Range of core subjects, which help in inculcating fundamental skills and knowledge required in the field of planning.
- Electives which allows student to develop his / her expertise in particular direction.
- Studio projects, which help student to show and develop individual competence. It provides student with opportunity to integrate coursework into solving a planning problem.
- Professional Training, in which student can gain initial professional field experience.

It is a postgraduate programme that provides a comprehensive professional training in the theory, method and practice of urban development planning. A focus on the planning and management of sustainable cities and regions is an important distinguishing feature of the programme and this focus is reinforced by the research carried out in the department itself.

Although primarily designed for those who intend to enter the planning profession, the programme also offers wide-ranging coverage of contemporary urban development issues with a strong emphasis on the Indian context. Department has very experienced and qualified faculty for the programme.

The programme was established in 1992. Since then it has produced many professionals.

The programme provides more student-centred learning environment with opportunities to develop skills in a variety of specialist areas and analytical abilities in a range of crosscutting thematic areas of importance in contemporary urban planning.

The programme offers excellent opportunities for academic and professional advancement in urban planning.

<b>Semester</b>	<b>1<sup>st</sup> FT &amp; 1<sup>st</sup> PT</b>
<b>Subject Code</b>	<b>UDP 101</b>
<b>Subject name</b>	<b>Statistics and Demography</b>

**(A) STATISTICS:**

- Theory of probability, random variables and distribution of sample statistics. Some important sampling distributions.
- Statistical inferences: Estimation of population parameters, testing of hypotheses.
- Elementary association models: Chi-square test; simple linear regression and correlation. Time –series analysis. Index numbers.
- Statistics available for spatial analysis: An appraisal.
- Statistical Graphics.

**(B) DEMOGRAPHY:**

- Introduction, scope, method, subject matter and relevance for spatial planning, sources of demographic data.
- Interrelations: Population change, Socio -economic dimension of development and pattern of human settlements.
- Population, composition and spatial distribution; Population structure and composition, spatial distribution- causes and implications of spatial differentiation.
- Analysis of labour force, mortality and fertility, Life table technique, relevance for spatial planning. Theory models and measurement of internal migration and urban growth.
- Population estimation projection and different methods of projection: Techniques relevant for regions and settlements. Indian Population census data: An appraisal.

**NOTE:** Sessional work shall consist of case studies/ analytical reports / seminars and term paper. these should be supported with computer applications.

<b>Semester</b>	<b>1<sup>st</sup> FT &amp; 1<sup>st</sup> PT</b>
<b>Subject Code</b>	<b>UDP 102</b>
<b>Subject name</b>	<b>Planning Techniques</b>

- Introduction to various planning techniques used since historic times.
- Planning standards & Bye laws, Goals and objectives in Planning, Process and method for survey and research, Introduction to regional delineation techniques.
- Process and method for survey and research, methodology of conducting survey.
- Basic quantitative methods in collecting data, analysis, projecting and presenting data on various land uses.
- Introduction to
  - a) Techniques of system simulation, Garin and Lowry’s Model
  - b) Techniques of Plan formulation and preparation at various levels.
  - c) Threshold Analysis
- Problems of urban renewal, study of various techniques.
- Planning Graphics.

**NOTE:** Sessional work shall consist of case studies / analytical reports / seminars and term papers etc. based on application of planning principles and techniques. these should be supported with computer applications

<b>Semester</b>	<b>1<sup>st</sup> FT &amp; 1<sup>st</sup> PT</b>
<b>Subject Code</b>	<b>UDP 103</b>
<b>Subject name</b>	<b>Evolution of Planning Thought</b>

- Development of planning thought and principles from ancient times and its relevance in modern context, historical determinants, mobility, socio –cultural beliefs, climate, technology, political power, geographical location etc. Settlement types and patterns; ancient medieval

renaissance and industrial age, Planning concept in India, ancient, Pre independence and post independence development.

- City as a living spatial entity, Ekistics and the city, contribution of Ebenezer Howard, Geddes, Mumford and others in city planning.
- Aims and objectives of physical planning, levels of planning in India and their inter-relationships. Physical nature and characteristics of urban environment and its components. Land uses –physical structure and relationship of parts of the city, Models of urban structure.
- Models of planning process
- Different strategies and approaches in planning like Systems approach Mixed scanning and approach to land use planning. Choice theory and advocacy planning and their relevance, Comprehensive Planning.
- Different types of Urban plans at micro and macro level  
Study - Development of any city

**NOTE:** Sessional work shall consist of case studies / analytical reports / seminars and term paper. these should be supported with computer applications.

<b>Semester</b>	<b>1<sup>st</sup> FT &amp; 3<sup>rd</sup> PT</b>
<b>Subject Code</b>	<b>UDP 104</b>
<b>Subject name</b>	<b>Traffic and Transportation Planning</b>

- 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

**NOTE:** Sessional work shall consist of case studies/ analytical reports / seminars and term paper. these should be supported with computer applications.

<b>Semester</b>	<b>1<sup>st</sup> FT &amp; 3<sup>rd</sup> PT</b>
<b>Subject Code</b>	<b>UDP 105</b>
<b>Subject name</b>	<b>Housing and Community Planning</b>

- Definition of housing and community. Housing as integral component of comprehensive urban and regional development. Housing and community form as shaped by physical, technological, socio-economic, demographic and political factors. Role of housing in social and economic development. Housing as an index for social welfare. Housing in relation to stages of development particularly as related to developing economy.

- Micro and macro economic view of the housing sector. Housing situation in India in quantitative and qualitative terms. Housing statistics. Obstacles to provision of housing in India and emerging issues and priorities in urban and rural housing.
- Basic considerations for the formulation of viable housing policy and programmes in consonance with availability of resources and feasibility of implementation and management. Housing policy options in developing communities.
- Housing programmes in five year plans of India. Social housing programmes, Role of private and corporate sectors in housing. Housing in the informal sector. Problems of slums and squatting.
- Public housing programmes, site and services and slums up gradation approach. The concept of housing standards and issues involved in formulation of standards. Housing and its relation to non- residential components of settlement.
- Socio cultural perspective of housing. Housing and family life. Principles of community organization. Social sources of residential satisfaction. Community participation in design and implementation of housing programmes .
- Public housing agencies in India at National, State and Settlement level. Their functions and programmes

NOTE: Sessional work shall consist of case studies / analytical reports / seminars and term paper. these should be supported with computer applications.

<b>Semester</b>	<b>1<sup>st</sup> FT &amp; 3<sup>rd</sup> PT</b>
<b>Subject Code</b>	<b>UDP 141 &amp; UDP 142</b>
<b>Subject name</b>	<b>Planning Studio and Seminar –I</b>

Studio shall consist of minimum of two problems.

#### **I. MINOR PROBLEM:**

- Design and lay out for an Industrial, Commercial, Institutional areas etc. on an existing site of about 10 hectares land .The items to be submitted may include. (I) Site analysis clearly indicating all physical features, potentials and problems as well as land suitable for buildings (II) Design of dwelling units-All plans and at least, two elevations and one section on 1:100 scale. (III) Layout of buildings and roads. (IV) Layout showing trunk sewer, main waterlines and refuse collection points. (V) Layout showing landscaping proposal along with buildings and roads all on 1:1000 scale (VI) Report not more than 25 double –spaced typed pages of A-4 size containing introduction site analysis, area calculation s etc. followed in design process.

#### **II. MAJOR PROBLEM:**

- Study of an existing Town for its Urban Development and Planning. The proposal may include (I) An existing land uses map indicating all its subcategories and extent and nature of use/ activity.(II)A map showing the future proposal as given in the development plan along with all facts and figures .(III) Analysis of standards adopted in the Development Plan regarding the various land uses , with suggestion of improvements and various techniques etc.(IV) A comprehensive report of not more then 75 double spaced typed pages of A-4 size containing introduction, reasons for selection of the Town and the planning alternatives with analysis, calculations, observations and recommendation etc.

NOTE: (I) The major problems may be done in group .

(ii) The site visits of recognized number and time shall be essential for solving both the problems .

(III) Computer applications shall be necessary.

<b>Semester</b>	<b>2<sup>nd</sup> FT &amp; 2<sup>nd</sup> PT</b>
<b>Subject Code</b>	<b>UDP 151</b>
<b>Subject name</b>	<b>City and Regional Planning</b>

- Trends of growth (causes and consequences), Urbanization, Metropolitanisation etc.
- Physical structure of city, land-use planning, traffic and transportation etc.
- Spatial planning and management of Urban areas
- Concept of Region, delineation – theories and methods
- Concepts and theories of planning
- National planning framework and multilevel planning
- Development strategies in regional context
- Acts and laws
- Sustainability concepts
- Different types of regional plans at micro and macro level

NOTE: Sessional work shall consist of case studies / analytical reports / seminars and term paper. these should be supported with computer applications.

<b>Semester</b>	<b>2<sup>nd</sup> FT &amp; 2<sup>nd</sup> PT</b>
<b>Subject Code</b>	<b>UDP 152</b>
<b>Subject name</b>	<b>Land Economics and Management</b>

- Importance of economics of Urban Development and Planning. General introduction to principles of economics and public finance.
- Project development cost. Economic principles of land use pattern and land values.
- National five-year plans; appraisal and economic development in relation to regional and urban development.
- 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.
- Other relevant case studies of Urban Land Economics.

NOTE: Sessional work shall consist of case studies / analytical reports / seminars and term paper. these should be supported with computer applications

<b>Semester</b>	<b>2<sup>nd</sup> FT &amp; 2<sup>nd</sup> PT</b>
<b>Subject Code</b>	<b>UDP 153</b>
<b>Subject name</b>	<b>Project Management</b>

- Types of Urban Development and Planning projects.
- Organization structures for Urban Development and Planning.
- Management functions, skills etc.
- Project planning; Network techniques and analysis.
- Project Implementation; contracts, other methods for execution of projects. Role of government/semi government/Non government bodies
- Monitoring and Review Techniques, Time and cost controls, time value of money.
- Sustainability and Impact of amendment 74<sup>th</sup> amendment act (73<sup>rd</sup> amendment bill) on project management.

NOTE: Sessional work shall consist of case studies / analytical reports / seminars and term paper. these should be supported with computer applications.

<b>Semester</b>	<b>2<sup>nd</sup> FT &amp; 4<sup>th</sup> PT</b>
<b>Subject Code</b>	<b>UDP 161 – UDP 163</b>

<b>Subject name</b>	<b>Elective-I</b>
---------------------	-------------------

<b>Semester</b>	<b>2<sup>nd</sup> FT/4<sup>th</sup> PT</b>
<b>Subject Code</b>	<b>UDP 161</b>
<b>Subject name</b>	<b>Ecology and Resource Development</b>

- 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.
- Ecological awareness in India, traditional indigenous methods, contemporary trends. Endangerments and resources, definition and classification according to different criteria, end 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.).

NOTE: Sessional work shall consist of case studies / analytical reports / seminars and term paper. these should be supported with computer applications.

<b>Semester</b>	<b>2<sup>nd</sup> FT &amp; 4<sup>th</sup> PT1</b>
<b>Subject Code</b>	<b>UDP 162</b>
<b>Subject name</b>	<b>Ancient Indian Planning</b>

- Vastu definition and its basic objectives and principles with relevance to Urban Development and planning.
- The historical background of vastu and its relation to – city growth Spiritual
- History Socio – cultural background, political development, Natural Settings etc.
- Vastu oriented planning analysis related to – regional & Urban Perspective, direction of growth, urban structure & image, Urban ecology, social anthropology & administration & services.
- The Various Vastu parameters both Natural and man made as
- Applicable to physical planning at all levels also analytical understanding about the formulation of various Norms.

NOTE: Sessional work shall consist of case studies / analytical reports / seminars and term paper. these should be supported with computer applications.

<b>Semester</b>	<b>2<sup>nd</sup> FT &amp; 4<sup>th</sup> PT</b>
<b>Subject Code</b>	<b>UDP 163</b>

<b>Subject name</b>	<b>Environmental Planning</b>
---------------------	-------------------------------

- Introduction to Environmental planning, aims, objectives & Implementation. Introduction to State and National policies.
- Use of various planning theories for environmental planning and their impact on environment.
- Issues related to Environment & 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 & water pollution, industrial pollution and solid waste management in urban areas.
- Environmental impact & resources and its analysis. 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 agencies and legislation.
- Environmental policies for various geographical regions.

NOTE: Sessional work shall consist of case studies / analytical reports / seminars and term paper. these should be supported with computer applications.

<b>Semester</b>	<b>2<sup>nd</sup> FT &amp; 4<sup>th</sup> PT</b>
<b>Subject Code</b>	<b>UDP 164 –UDP 167</b>
<b>Subject name</b>	<b>Elective-II</b>

<b>Semester</b>	<b>2<sup>nd</sup> FT &amp; 4<sup>th</sup> PT</b>
<b>Subject Code</b>	<b>UDP 164</b>
<b>Subject name</b>	<b>Landscape Planning</b>

- 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, neighborhood 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.

NOTE: Sessional work shall consist of case studies / analytical reports / seminars and term paper. these should be supported with computer applications.

<b>Semester</b>	<b>2<sup>nd</sup> FT &amp; 4<sup>th</sup> PT</b>
<b>Subject Code</b>	<b>UDP 165</b>
<b>Subject name</b>	<b>Energy Efficient Environment Services</b>

- 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.

**NOTE:** Sessional work shall consist of case studies / analytical reports / seminars and term paper. these should be supported with computer applications.

<b>Semester</b>	<b>2<sup>nd</sup> FT &amp; 4<sup>th</sup> PT</b>
<b>Subject Code</b>	<b>UDP 166</b>
<b>Subject name</b>	<b>Urban Energy Systems</b>

- Current energy systems, Alternative energy systems, Solar, Wind, Wave and Tide, Bicycle/Mechanical, Bio, Geo-Thermal.
- Changing Energy Consumption Patterns, Patterns in Human Settlement; Energy Management, Energy Technology appraisal criteria, Non environmental criteria :financial viability ,supply security ,wider economics.
- Key issues in Urban Energy Systems: Sustainability, Management, Planning, Engineering, Technology and Financing.
- Energy Fact Sheets: Traditional Fuels of Today and Yesterday, Nuclear Energy, Energy Use/Waste and Society, Consequences.
- Energy Environmental Interactions, Economic Considerations. World Energy and Challenge of Sustainability

<b>Semester</b>	<b>2<sup>nd</sup> FT &amp; 4<sup>th</sup> PT</b>
<b>Subject Code</b>	<b>UDP 167</b>
<b>Subject name</b>	<b>Rural planning and development</b>

- Relevance of rural areas for urban 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, 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 programmes
- Projections and forecasting

<b>Semester</b>	<b>2<sup>nd</sup> FT &amp; 4<sup>th</sup> PT</b>
<b>Subject Code</b>	<b>UDP 191 &amp; UDP 192</b>
<b>Subject name</b>	<b>Planning Studio and Seminar -II</b>

**I. Minor Problem**

- Planning evaluation and appraisal of small & medium town/ central metropolitan areas/business districts / residential/industrial areas schemes
- Identify and explain the objectives of the problem
- Surveys conducted for the preparation of plans
- Study of Physical Growth of socio Economic potentials, directly related to land use.
- Planning Proposals.
- Implementation procedures and development control regarding selected land use.
- Appraisal of plan , Report submission

**II. Major problem**

- Preparation of development / redevelopment plans for small and medium town / metropolitan cities reasons for selection of towns with
- Surveys
- Data collection
- Maps preparation
- Planning proposals & analysis, calculation, recommendations
- Feasibility, implementation reports

NOTE: Sessional work shall consist of case studies / analytical reports / seminars and term paper. these should be supported with computer applications.

<b>Semester</b>	<b>3<sup>rd</sup> FT &amp; 5<sup>th</sup> PT</b>
<b>Subject Code</b>	<b>UDP 201</b>
<b>Subject name</b>	<b>Remote Sensing and GIS</b>

- Basic remote sensing, platform, sensors, and introduction to sensors, basic principal & 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
- 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.
  - Experiments in lab
  - Instruction for making overlays
  - Computation of photo scale
  - Orientation of a stereo pair under a mirror stereoscope
  - Recognition on aerial photograph of objects indicated on ground photographs
  - Detection of defined objects
  - Description and identification of objects
  - Use of auxiliary features for object identification
  - Systematic scanning of a photograph, and object identification
  - Identification of land use with a given classification
  - Monitoring urban changes
  - Mosaic preparation
- Base map preparation & elementary data analysis using satellite data
  - Experiments in lab
  - Instruction for making overlays
  - Classification preparation
  - Interpretation & delineation of various land use on satellite data products

- GIS techniques and their application in planning field

NOTE: sessional work shall consist of term paper, small project formulation using satellite data, analytical report preparation through GIS, seminars

<b>Semester</b>	<b>3<sup>rd</sup> FT &amp; 5<sup>th</sup> PT</b>
<b>Subject Code</b>	<b>UDP 202</b>
<b>Subject name</b>	<b>Planning Legislation and Professional Practice</b>

- 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.
- Significance of law and its relationship to urban planning, benefits of statutory backing for schemes – eminent domain and police powers. Indian constitution, concept and contents. Provisions regarding property right, Legislative competence of State and Central Government to enact town-planning legislation.
- National Environmental Policy Act, 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 and implementation of regional plans, Master Plans and Town Planning Schemes.
- Concepts of arbitration, Betterment Levy, Development Charges and Public participation in statutory planning process, Concepts of structure plan, local plan and action plan under the English Law. 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. Significance of land development control – objectives and legal tools, critical evaluation of zoning, sub division regulations, building regulations and byelaws. Development Code, zoning law and law relating to periphery control.
- Introduction to law relating to slum clearance, housing, landscape and traffic. Legislation relating to urban conservation and restoration, historical monuments, archaeological sites. Aims and objectives of professional institutes, sister bodies, professional role and responsibility of planning consultants, professional ethics, code of conduct and scale of professional charges.
- Formulation of project proposal and outlines, consultancy agreements and contracts marginal aspects. Role of interdisciplinary groups. Appreciation of the decision making process and the process in relation to varied consultancy assignment of planning.
- Case study - of implications of acts at various planning levels.

NOTE: Sessional work shall consist of case studies / analytical reports / seminars and term paper. these should be supported with computer applications.

<b>Semester</b>	<b>3<sup>rd</sup> FT &amp; 5<sup>th</sup> PT</b>
<b>Subject Code</b>	<b>UDP 211 – UDP 214</b>
<b>Subject name</b>	<b>Elective - III</b>

<b>Semester</b>	<b>3<sup>rd</sup> FT / 5<sup>th</sup> PT</b>
<b>Subject Code</b>	<b>UDP 211</b>
<b>Subject name</b>	<b>Urban Governance and Management</b>

- Introduction to research methods & presentation techniques.
- Introduction, need and relevance of urban governance, An overview of urban governance. Chronological development form pre independence era.
- Organizational setup and institutional interrelationship with respect to fiscal and administrative powers/ duties.
- Tools for urban governance.

- e-governance and emerging issues of urban governance.
- Governance system at different levels.
- Role of NGO's, public sector, private sector and social institutions

NOTE: Sessional work shall consist of case studies / analytical reports / seminars and term paper. these should be supported with computer applications.

<b>Semester</b>	<b>3<sup>rd</sup> FT &amp; 5<sup>th</sup> PT</b>
<b>Subject Code</b>	<b>UDP 212</b>
<b>Subject name</b>	<b>Planning of Disaster Prone Areas</b>

#### 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 & 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 & HOUSING

- Shelter typology for different hazardous situations
- Housing design and planning at pre and post disaster level
- Traditional methods of planning and construction
- Modification of unsafe housing and disaster resistant structures

#### EMERGENCY CAMPS & 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

NOTE: Sessional work shall consist of case studies / analytical reports / seminars and term paper. these should be supported with computer applications.

<b>Semester</b>	<b>3<sup>rd</sup> FT &amp; 5<sup>th</sup> PT</b>
<b>Subject Code</b>	<b>UDP 213</b>
<b>Subject name</b>	<b>Urban Conservation</b>

This course intends to develop an understanding of Conservation in Urban Development Planning

- Meaning of conservation Development, Need and degrees of Conservation.

- History of Conservation in India & west, Conservation charters, Role of archeological survey of India in Conservation of India's cultural heritage.
- Listing and documentation, it's importance and it's methods, Byelaws in Conservation Development. Need of conserving the heritage sites in urban context.
- Urban Conservation, methodologies to be adopted for urban conservation management with emphasis on Urban Renewal & Urban re development.
- Case studies in Conservation of heritage sites.

Adoptive & adaptive reuse, Preservation, Urban conservation.

NOTE: Sessional work shall consist of case studies / analytical reports / seminars and term paper. these should be supported with computer applications.

<b>Semester</b>	<b>3<sup>rd</sup> FT &amp; 5<sup>th</sup> PT</b>
<b>Subject Code</b>	<b>UDP 214</b>
<b>Subject name</b>	<b>Planning and Development of Informal Sector</b>

- 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. these should be supported with computer applications.

<b>Semester</b>	<b>3<sup>rd</sup> FT &amp; 5<sup>th</sup> PT</b>
<b>Subject Code</b>	<b>UDP 241 &amp; UDP 242</b>
<b>Subject name</b>	<b>Planning Studio III (Project Formulation and Seminar)</b>

- Introduction to the life cycle of project. Identification, formulation appraisal monitoring and evaluation. The role of project formulation and appraisal in the planning process.
- Methodology for project identification and formulation of opportunity studies, feasibility reports and detailed project reports. Policy parameters for appraisal of project report. Planning commission guidelines, requirement of principle financing agencies in the field of urban and regional planning. Review of project appraisal techniques adopted by financing agencies cost effectiveness analysis and cost benefit analysis.
- Financial cost benefit analysis, cash flow analysis, time value of money, discounted and non discounted cash flow analysis. Measures of project profitability based on market prices. Net present value, internal rate of return, benefit cost ratio, etc. exercises and cash studies.
- Economic cost-benefit analysis. Distinction between market prices and accounting prices, objective functions in economic cost-benefit analysis, derivation and application of shadow wage rates. Measures of project profitability based on efficiency prices. Case studies.
- Social cost-benefit analysis: Trade offs between efficiency and equity goals in project appraisal, measurement of direct and indirect costs and benefits in different sectors of urban and rural development. Adjustments for project. Impact on saving and investment, income distribution, consumption of merit and demerit goods. Case studies.
- Techniques for identifying and assessing condition of risk and uncertainty in the project environment. Sensitivity and probability analysis in the Indian context. Emerging trends in

the decision making process with respect to project appraisal and resource allocation at various levels of government.

- Preparation of project proposals with all details and presented as seminar.

NOTE: Sessional work shall consist of case studies / analytical reports / seminars and term paper. these should be supported with computer applications.

<b>Semester</b>	<b>3<sup>rd</sup> FT &amp; 5<sup>th</sup> PT</b>
<b>Subject Code</b>	<b>UDP 243</b>
<b>Subject name</b>	<b>Dissertation (Pre Thesis work)</b>

- The intention of this subject is to develop the research aptitude and skill of report writing. The work shall be done on any topic related to the field of Planning Project.

NOTE: Sessional work shall consist of case studies / analytical reports / seminars and term paper. these should be supported with computer applications.

<b>Semester</b>	<b>2<sup>nd</sup> FT / 2<sup>nd</sup> PT</b>
<b>Subject Code</b>	<b>-</b>
<b>Subject name</b>	<b>Training</b>

- Eight weeks professional training during semester break after second semester
- The student shall have to complete the practical training of one semester in a Planning organization in government. Pvt. sector so as to qualify for obtaining the final M.U.D.P. degree. The organization selected for training shall have to be approved by the department of Architecture & Planning. The student shall submit, to the department, the practical training report along with the certificates by the firm/ office/ organization to the effect that he/ she has completed training satisfactorily for one semester. The student shall have to appear for the viva examination as per the schedule announced by the department.

NOTE: Sessional work shall consist of case studies / analytical reports / seminars and term paper. these should be supported with computer applications.

<b>Semester</b>	<b>4<sup>TH</sup> FT / 6<sup>th</sup> PT</b>
<b>Subject Code</b>	<b>UDP 298</b>
<b>Subject name</b>	<b>THESIS PROJECT</b>

- 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, analytical, and comparative or in any other area related to urban development and planning which shall be approved by the department.
- Each candidate will prepare the thesis in consultation with a guide as approved by the department.
- Each student is required to defend the thesis at viva-voce examination.

NOTE: Every student has to follow the instructions given in the thesis manual issued and schedule worked out by the department.