MODEL CURRICULUM

FOR

M. PLAN / M. TECH (PLANNING)

2012

ALL INDIA COUNCIL FOR TECHNICAL EDUCATION
7th Floor, Chandralok Building, Janpath
New Delhi – 110 001

FORWARD

It is with great pleasure and honour that I write a forward for the Model Scheme of Instruction and Syllabi for the Post Graduate Program in Planning prepared by the All India Board of Town and Country Planning Education with Shri D.S. Meshram as its Chairman and other members. All India Council for Technical Education has the onerous responsibility for uniform development and qualitative growth of the Technical Education System and preparation of syllabi to maintain uniform standards throughout the country. In pursuance to clause 10 (2) of the AICTE Act 1987, AICTE has the objective of bringing about uniformity in the curriculum of Technology. In that direction, the efforts of the All India Board of Town and Country Planning Education has been quite commendable and praiseworthy.

A good effort was made by the Chairman, members of the Board and members of Task Force constituted by the Board for framing the syllabi. In addition Chairman of the Board had made efforts to obtain the views of Planning Departments of SPA, New Delhi and inputs of senior professionals of Institute of Town Planners, India which would go long way in getting acceptability of the syllabi by professional experts, educationists and researchers.

The Board was ably assisted by the officials of the Academics Bureau in successfully organizing the meetings, making available necessary documents, and follow up action on the minutes of the meetings.

Chairman
All India Council for Technical Education

SCHEME OF SYLLABUS
M. PLANNING / M. TECH (PLANNING): SPECIALIZATION IN URBAN PLANNING

S. No	Code	Subject	Hrs. per Week		End Semester Exam/ External Jury (Marks)	Internal Assessment (Marks)	Credits (T)	Credits (P)	Total Credit
INTEGRATED FIRST SEMESTER									
1	InC1.1	**Planning History and Theory**	3	--	50	50	3	--	3
2	InC1.2	**Socio-economic basis for Planning**	3	--	50	50	3	--	3
3	InC1.3	**Planning Techniques**	3	--	50	50	3	--	3
4	InC1.4	**Infrastructure and Transport Planning**	3	--	50	50	3	--	3
5	InC1.5	**Housing Environments and Planning**	3	--	50	50	3	--	3
6	InC1.6	**Basic Planning Techniques**	3	--	--	100	3	--	3
7	InL1.1	**Planning Studio**	--	12	150	250	--	6	6
		Film Appreciation			--	50			
		Literature Review			--	50			
		Area Appreciation			50	50			
		Site Planning			50	50			
		Statutory Development Plan			50	50			
		Sub-Total	**18**	**12**	**400**	**600**	**18**	**6**	**24**
SECOND SEMESTER (SPECIALIZATION IN URBAN PLANNING)									
1	UPC2.1	**City and Metropolitan Planning**	3	--	50	50	3	--	3
2	UPC2.2	**Infrastructure Planning**	3	--	50	50	3	--	3
3	UPC2.3	**Urban Heritage Conservation**	3	--	50	50	3	--	3
4	UPC2.4	**Advanced Planning Techniques**	3	--	50	50	3	--	3
5	UPC2.5	**Urban Planning Studio - I**							
		Geo-Informatics – I	3	--	50	50	3	--	3
		Development Plan	--	12	150	250	--	6	6
6	UPE2.1	**Inclusive Urban Planning**	3	--	50	50	3	--	3
	UPE2.2	**Planning for Tourism**							
7	**Mandatory Training of Six Weeks after Second Semester during Summer Vacation**								
		Sub-Total	**18**	**12**	**450**	**550**	**18**	**6**	**24**

THIRD SEMESTER (SPECIALIZATION IN URBAN PLANNING)									
1	UPC3.1	**Urban Development and Management**	3	--	50	50	3	--	3
2	UPC3.2	**Project Planning and Management**	3	--	50	50	3	--	3
3	UPC3.3	**Urban Governance**	3	--	50	50	3	--	3
4	UPC3.4	**Politics and Planning**	3	--	50	50	3	--	3
5	UPC3.5	**Urban Planning Studio - II**							
		Geo-Informatics – II	3	--	50	50	3	--	3
		Management and Governance Plan	--	12	150	250	--	6	6
6	UPE3.1	**Environment, Development and Disaster Management**	3	--	50	50	3	--	3
	UPE3.2	**Energy, Climate Change and Urban Development**							
7	UPT3.1	**Review of Six Weeks Mandatory Training during Summer Vacation after Second Semester.**							
		Sub-Total	**18**	**12**	**450**	**550**	**18**	**6**	**24**
FOURTH SEMESTER (SPECIALIZATION IN URBAN PLANNING)									
1	UPC4.1	**Development Finance**	3	-	50	50	3	--	3
2	UPC4.2	**Legal Issues and Professional Practice**	3	-	50	50	3	--	3
3	UPC4.3	**Thesis**	--	24	300	500	--	12	12
Sub-Total			**6**	**24**	**400**	**600**	**6**	**12**	**18**
	Grand Total		**60**	**60**	**1700**	**2300**	**60**	**30**	**90**

Note: (1) Credits for Theory: One Credit for one hour of teaching per week.
(2) Credits for Practical: One Credit for two hours of practical per week.
(3) Six Weeks Training after Second Semester during the summer vacation is **mandatory** for which the Review will be held in Third Semester.

SCHEME OF SYLLABUS
M. PLANNING / M. TECH (PLANNING): SPECIALIZATION IN REGIONAL PLANNING

S. No	Code	Subject	Hrs. per Week		End Semester Exam/ External Jury (Marks)	Internal Assessment (Marks)	Credits (T)	Credits (P)	Total Credit
			The.	Pra.					
INTEGRATED FIRST SEMESTER									
1	InC1.1	**Planning History and Theory**	3	--	50	50	3	--	3
2	InC1.2	**Socio-economic basis for Planning**	3	--	50	50	3	--	3
3	InC1.3	**Planning Techniques**	3	--	50	50	3	--	3
4	InC1.4	**Infrastructure and Transport Planning**	3	--	50	50	3	--	3
5	InC1.5	**Housing Environments and Planning**	3	--	50	50	3	--	3
6	InC1.6	**Basic Planning Techniques**	3	--	--	100	3	--	3
7	InL1.1	**Planning Studio**	--	12	150	250	--	6	6
		Film Appreciation			--	50			
		Literature Review			--	50			
		Area Appreciation			50	50			
		Site Planning			50	50			
		Statutory Development Plan			50	50			
		Sub-Total	**18**	**12**	**400**	**600**	**18**	**6**	**24**
SECOND SEMESTER (SPECIALIZATION IN REGIONAL PLANNING)									
1	RPC2.1	**Planning for Regions**	3	--	50	50	3	--	3
2	RPC2.2	**Infrastructure Management**	3	--	50	50	3	--	3
3	RPC2.3	**District Planning and Rural Development**	3	--	50	50	3	--	3
4	RPC2.4	**Land Markets and Management**	3	--	50	50	3	--	3
5	RPC2.5	**Poverty and Development**	3	--	50	50	3	--	3
6	RPC2.6	**Regional Planning Studio - I**							
		Applied GIS and Spatial Data Infrastructure – I	3	--	50	50	3	--	3
		Block or Tehsil Plan	--	12	150	250	--	6	6
		Mandatory Training of Six Weeks after Second Semester during Summer Vacation							
		Sub-Total	**18**	**12**	**450**	**550**	**18**	**6**	**24**

THIRD SEMESTER (SPECIALIZATION IN REGIONAL PLANNING)									
1	RPC3.1	**Environment and Development**	3	--	50	50	3	--	3
2	RPC3.2	**Project Planning**	3	--	50	50	3	--	3
3	RPC3.3	**Institutional Analysis and Governance**	3	--	50	50	3	--	3
4	RPC3.4	**Politics and Public Policy**	3	--	50	50	3	--	3
5	RPC3.5	**Resettlement and Rehabilitation**	3	--	50	50	3	--	3
6	RPC3.6	**Regional Planning Studio - II**							
		Spatial Data Infrastructure – II	3	--	50	50	3	--	3
		District Planning / Regional Planning	--	12	150	250	--	6	6
7	RPT3.1	**Review of Six Weeks Mandatory Training during Summer Vacation after Second Semester.**							
		Sub-Total	**18**	**12**	**450**	**550**	**18**	**6**	**24**
FOURTH SEMESTER (SPECIALIZATION IN REGIONAL PLANNING)									
1	RPC4.1	**Financing Development**	3	--	50	50	3	--	3
2	RPC4.2	**Legal Issues in Planning**	3	--	50	50	3	--	3
3	RPC4.3	**Thesis**	--	24	300	500	--	12	12
		Sub-Total	**6**	**24**	**400**	**600**	**6**	**12**	**18**
		Grand Total	**60**	**60**	**1700**	**2300**	**60**	**30**	**90**

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(2) Credits for Practical: One Credit for two hours of practical per week.
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SCHEME OF SYLLABUS

M. PLANNING / M. TECH (PLANNING): SPECIALIZATION IN ENVIRONMENTAL PLANNING

S. No	Code	Subject	Hrs. per Week		End Semester Exam/ External Jury (Marks)	Internal Assessment (Marks)	Credits (T)	Credits (P)	Total Credit
			The.	Pra.					
INTEGRATED FIRST SEMESTER									
1	InC1.1	**Planning History and Theory**	3	--	50	50	3	--	3
2	InC1.2	**Socio-economic basis for Planning**	3	--	50	50	3	--	3
3	InC1.3	**Planning Techniques**	3	--	50	50	3	--	3
4	InC1.4	**Infrastructure and Transport Planning**	3	--	50	50	3	--	3
5	InC1.5	**Housing Environments and Planning**	3	--	50	50	3	--	3
6	InC1.6	**Basic Planning Techniques**	3	--	--	100	3	--	3
7	InL1.1	**Planning Studio**	--	12	150	250	--	6	6
		Film Appreciation			--	50			
		Literature Review			--	50			
		Area Appreciation			50	50			
		Site Planning			50	50			
		Statutory Development Plan			50	50			
		Sub-Total	**18**	**12**	**400**	**600**	**18**	**6**	**24**
SECOND SEMESTER (SPECIALIZATION IN ENVIRONMENTAL PLANNING)									
1	EPC2.1	**Theory of Environmental Planning**	3	--	50	50	3	--	3
2	EPC2.2	**Environmental Design**	3	--	50	50	3	--	3
3	EPC2.3	**Environmental Monitoring and Assessment**	3	--	50	50	3	--	3
4	EPC2.4	**Environmental Impact Assessment**	3	--	50	50	3	--	3
5	EPC2.5	**Environmental Monitoring and Assessment (Laboratory)**	3	--	50	50	3	--	3
6	EPC2.6	**Environmental Planning Studio - I**							
		Geo-Informatics – I	3	--	50	50	3	--	3
		Environmental Planning and Assessment	--	12	150	250	--	6	6
	Mandatory Training of Six Weeks after Second Semester during Summer Vacation								

		Sub-Total	**18**	**12**	**450**	**550**	**18**	**6**	**24**
THIRD SEMESTER (SPECIALIZATION IN ENVIRONMENTAL PLANNING)									
1	EPC3.1	**Environmental Economics and Auditing**	3	--	50	50	3	--	3
2	EPC3.2	**Environmental Protection and Management**	3	--	50	50	3	--	3
3	EPC3.3	**Environmental Legislation, Evaluation and Practices**	3	--	50	50	3	--	3
4	EPC3.4	**Advanced EIA Techniques**	3	--	50	50	3	--	3
5	EPC3.5	**Planning Legislation**	3	--	50	50	3	--	3
6	EPC3.6	**Environmental Planning Studio - II**							
		Geo-Informatics - II	3	--	50	50	3	--	3
		Management and Conservation Plan	--	12	150	250	--	6	6
7	EPT3.1	**Review of Six Weeks Mandatory Training during Summer Vacation after Second Semester.**							
		Sub-Total	**18**	**12**	**450**	**550**	**18**	**6**	**24**
FOURTH SEMESTER (SPECIALIZATION IN ENVIRONMENTAL PLANNING)									
1	EPC4.1	**Formulation, Financing and Management of Developed Projects**	3	--	50	50	3	--	3
2	EPC4.2	**Seminar on Emerging Environmental Concepts**	3	--	50	50	3	--	3
3	EPC4.3	**Thesis**	--	24	300	500	--	12	12
		Sub-Total	**6**	**24**	**400**	**600**	**6**	**12**	**18**
		Grand Total	**60**	**60**	**1700**	**2300**	**60**	**30**	**90**

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SCHEME OF SYLLABUS
M. PLANNING / M. TECH (PLANNING): SPECIALIZATION IN HOUSING

S. No	Code	Subject	Hrs. per Week The.	Pra.	End Semester Exam/ External Jury (Marks)	Internal Assessment (Marks)	Credits (T)	Credits (P)	Total Credit
INTEGRATED FIRST SEMESTER									
1	InC1.1	**Planning History and Theory**	3	--	50	50	3	--	3
2	InC1.2	**Socio-economic basis for Planning**	3	--	50	50	3	--	3
3	InC1.3	**Planning Techniques**	3	--	50	50	3	--	3
4	InC1.4	**Infrastructure and Transport Planning**	3	--	50	50	3	--	3
5	InC1.5	**Housing Environments and Planning**	3	--	50	50	3	--	3
6	InC1.6	**Basic Planning Techniques**	3	--	--	100	3	--	3
7	InL1.1	**Planning Studio**	--	12	150	250	--	6	6
		Film Appreciation			--	50			
		Literature Review			--	50			
		Area Appreciation			50	50			
		Site Planning			50	50			
		Statutory Development Plan			50	50			
		Sub-Total	**18**	**12**	**400**	**600**	**18**	**6**	**24**
SECOND SEMESTER (SPECIALIZATION IN HOUSING)									
1	HC2.1	**Urban and Rural Housing Policies and Programmes**	3	--	50	50	3	--	3
2	HC2.2	**Housing Standards, Design and Projects**	3	--	50	50	3	--	3
3	HC2.3	**Materials, Technology and Infrastructure**	3	--	50	50	3	--	3
4	HC2.4	**Urbanization and Land Management**	3	--	50	50	3	--	3
5	HC2.5	**Housing Finance and Project Formulation**	3	--	50	50	3	--	3
6	HC2.6	**Housing Studio - I**							
		Survey Techniques, RS and GIS - I	3	--	50	50	3	--	3
		Housing Options and Strategy	--	12	150	250	--	6	6
		Mandatory Training of Six Weeks after Second Semester during Summer Vacation							
		Sub-Total	**18**	**12**	**450**	**550**	**18**	**6**	**24**

THIRD SEMESTER (SPECIALIZATION IN HOUSING)									
1	HC3.1	**Real Estate and Housing Markets**	3	--	50	50	3	--	3
2	HC3.2	**Informal Housing, Slums and Poverty**	3	--	50	50	3	--	3
3	HC3.3	**Disaster Mitigation and Management**	3	--	50	50	3	--	3
4	HC3.4	**Legislation and Professional Practice**	3	--	50	50	3	--	3
5	HC3.5	**Inclusion, Participation and Communication**	3	--	50	50	3	--	3
6	HC3.6	**Housing Studio - II**							
		GIS Applications in Housing – II	3	--	50	50	3	--	3
		Project Formulation and Design	--	12	150	250	--	6	6
7	HT3.1	**Review of Six Weeks Mandatory Training during Summer Vacation after Second Semester.**							
		Sub-Total	**18**	**12**	**450**	**550**	**18**	**6**	**24**
FOURTH SEMESTER (SPECIALIZATION IN HOUSING)									
1	HC4.1	**Governance and Management for Housing**	3	--	50	50	3	--	3
2	HC4.2	**Housing for Special Areas and Groups**	3	--	50	50	3	--	3
3	HC4.3	**Thesis**	--	24	300	500	--	12	12
		Sub-Total	**6**	**24**	**400**	**600**	**6**	**12**	**18**
		Grand Total	**60**	**60**	**1700**	**2300**	**60**	**30**	**90**

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(2) Credits for Practical: One Credit for two hours of practical per week.
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SCHEME OF SYLLABUS
M. PLANNING / M. TECH (PLANNING): SPECIALIZATION IN TRANSPORT PLANNING

S. No	Code	Subject	Hrs. per Week		End Semester Exam/ External Jury (Marks)	Internal Assessment (Marks)	Credits (T)	Credits (P)	Total Credit
			The.	Pra.					
INTEGRATED FIRST SEMESTER									
1	InC1.1	**Planning History and Theory**	3	--	50	50	3	--	3
2	InC1.2	**Socio-economic basis for Planning**	3	--	50	50	3	--	3
3	InC1.3	**Planning Techniques**	3	--	50	50	3	--	3
4	InC1.4	**Infrastructure and Transport Planning**	3	--	50	50	3	--	3
5	InC1.5	**Housing Environments and Planning**	3	--	50	50	3	--	3
6	InC1.6	**Basic Planning Techniques**	3	--	--	100	3	--	3
7	InL1.1	**Planning Studio**	--	12	150	250	--	6	6
		Film Appreciation			--	50			
		Literature Review			--	50			
		Area Appreciation			50	50			
		Site Planning			50	50			
		Statutory Development Plan			50	50			
		Sub-Total	**18**	**12**	**400**	**600**	**18**	**6**	**24**
SECOND SEMESTER (SPECIALIZATION IN TRANSPORT PLANNING)									
1	TPC2.1	**Traffic Engineering**	3	--	50	50	3	--	3
2	TPC2.2	**Public Transport Planning**	3	--	50	50	3	--	3
3	TPC2.3	**Urban Transport Planning**	3	--	50	50	3	--	3
4	TPC2.4	**Highway Planning and Design**	3	--	50	50	3	--	3
5	TPC2.5	**Transport Economics**	3	--	50	50	3	--	3
6	TPC2.6	**Transport Planning Studio - I**							
		Traffic Laboratory and Software Applications – I	3	--	50	50	3	--	3
		Comprehensive Traffic and Transportation Plan for a City	--	12	150	250	--	6	6
		Mandatory Training of Six Weeks after Second Semester during Summer Vacation							
		Sub-Total	**18**	**12**	**450**	**550**	**18**	**6**	**24**

THIRD SEMESTER (SPECIALIZATION IN TRANSPORT PLANNING)									
1	TPC3.1	**Transport Infrastructure Design**	3	--	50	50	3	--	3
2	TPC3.2	**Transport Modeling and Planning**	3	--	50	50	3	--	3
3	TPC3.3	**Logistics and Freight Distribution**	3	--	50	50	3	--	3
4	TPC3.4	**Traffic Control System and Road Safety**	3	--	50	50	3	--	3
5	TPC3.5	**Transport Planning Studio - II**							
		Analytical Quantitative Techniques – II	3	--	50	50	3	--	3
		Project on Detailed Micro or Project Level Study on Transport Infrastructure Planning, Design and Management for a Case Study of Urban or Inter-Urban or Regional Level	--	12	150	250	--	6	6
6	TPE3.1	**Intelligent Transport System**	3	--	50	50	3	--	3
	TPE3.2	**Advanced Transport Economics**							
	TPE3.3	**Financing Transport Systems**							
	TPE3.4	**Regional Transport Planning**							
	TPE3.5	**Pavement Materials and Design**							
7	TPT3.1	**Review of Six Weeks Mandatory Training during Summer Vacation after Second Semester.**							
		Sub-Total	**18**	**12**	**450**	**550**	**18**	**6**	**24**
FOURTH SEMESTER (SPECIALIZATION IN TRANSPORT PLANNING)									
1	TPC4.1	**Transport Policy, Legislation and Institutional Framework**	3	--	50	50	3	--	3
2	TPC4.2	**Project Formulation and Appraisal**	3	--	50	50	3	--	3
3	TPC4.3	**Thesis**	--	24	300	500	--	12	12
		Sub-Total	**6**	**24**	**400**	**600**	**6**	**12**	**18**
		Grand Total	**60**	**60**	**1700**	**2300**	**60**	**30**	**90**

Note: (1) Credits for Theory: One Credit for one hour of teaching per week.
(2) Credits for Practical: One Credit for two hours of practical per week.
(3) Six Weeks Training after Second Semester during the summer vacation is **mandatory** for which the Review will be held in Third Semester.

Name of the Course: **M. Planning / M. Tech (Planning): Integrated First Semester**			
Name of the Subject: **PLANNING HISTORY AND THEORY**			
Subject Code: **In.C.1.1**	Semester: **First (Integrated)**		
Duration: **48 Hours**	Maximum Marks: **100**	Credits: **(3 + 0) = 3**	
Teaching Scheme	**Examination Scheme**		
Lecture : **3 hrs/week**	End Semester Exam: **Marks 50**		
Practical : **--**	Internal Assessment: **Marks 50**		
Aim: **To study History and Theory of Urban and Regional Planning.**			
Objective:			
1.	**To study Evolution of Cities and History of Planning.**		
2.	**To study Theories of City Development.**		
Pre-Requisites: --			

Contents		Hrs
Unit - 1	**Evolution of City Building** Relevance of the study of evolution of settlements; Hunter, gatherer, farmer and formation of organized society; Cosmological and other influences, 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.	9
Unit - 2	**Planning History** Town planning in ancient India; Medieval, renaissance, industrial and post industrial cities; City as a living spatial entity; Concepts of landmark, axis, orientation; City form as a living space; City as a political statement: New Delhi, Chandigarh, Washington D.C. Brasilia etc; Contribution of individuals to city planning: Lewis Mumford, Patrick Geddes, Peter Hall, etc; Dynamics of the growing city, impact of industrialization and urbanization, metropolis and megalopolis.	15
Unit - 3	**Definitions and Objectives of Planning** Definitions of town and country planning; Orthodoxies of planning; Goal formulation, objective, scope, limitations; Sustainability and rationality in planning; Components of sustainable urban and regional development.	9
Unit - 4	**Theories of City Development and Planning Theories** Theories of city development including Concentric Zone Theory, Sector Theory, Multiple Nuclei Theory and other latest theories; Land use and land value theory of William Alonso; Ebenezer Howard's Garden City Concept; and Green Belt Concept; City as an organism: a physical, social, economic and political entity; Emerging Concepts: global city, inclusive city, safe city, etc.; City of the future and future of the city; Shadow cities, divided cities; Models of planning: Advocacy and Pluralism in Planning; Systems approach to planning: rationalistic and incremental approaches, mixed scanning and middle range planning; Equity planning; Political Economy Model; Types of development plans, plan making process.	15

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1	Hall, P.	Cities of tomorrow: an	2001	Blackwell, London.

		intellectual history of urban planning and design in the twentieth century,		
2	Birch, E.L. and Silver, C.	One Hundred Years of City Planning's Enduring and Evolving Connections, Journal of the American Planning Association, Vol.75, Issue 2, pp.113-122.	2009	
3	Sandercock, L.	Making the Invisible Visible: A Multicultural Planning History	1998	University of California Press, London.
4	Brooks, M.P.	Four critical junctures in the history of the urban planning profession: An exercise in hindsight, Journal of the American Planning Association, Vol. 54, Issue 2, 241-248.	1988	
5	McLoughlin, J. B.	Urban and Regional Planning. A systems approach,	1969	Faber and Faber, London.
6	Faludi, A.	A Reader in Planning Theory,	1973	Pergamon Press, London.
7	Healey, P.	Collaborative Planning: Shaping Places in Fragmented Societies	1997	Macmillan, London.
8	Peter, G.H. and Tewdwr-Jones, M.	Urban and Regional Planning,	2011	Routledge, London. Fifth Edition.
List of Exercises / Practicals:				
1	Visit to Planning Organization / Department and submit Report on adoption of Concepts and Theories by them.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning): Integrated First Semester**		
Name of the Subject: **SOCIO - ECONOMIC BASIS FOR PLANNING**		
Subject Code: **In.C.1.2**	Semester: **First (Integrated)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: **(3 + 0) = 3**
Teaching Scheme	**Examination Scheme**	
Lecture : **3 hrs/week**	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To develop understanding with relevance to Socio-economic Issues in Urban and Regional Planning.**

Objective:

1. **To study Socio-cultural Profile of Indian Society in the context of Urban and Rural Settlements.**
2. **To study the Economic Growth and Development of Urban and Rural Settlements.**

Pre-Requisites: --

Contents		**Hrs**
Unit - 1	**Nature and Scope of 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.	9
Unit - 2	**Community and Settlements** 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.	15
Unit - 3	**Elements of Micro and Macro Economics** 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.	12
Unit - 4	**Development Economics and Lessons from Indian Experiences** 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.	12

Text / Reference Books:				
S. No.	**Name of Authors**	**Titles of the Book**	**Edition**	**Name of the Publisher**
1.	N. Jayapalan	Urban Sociology	2002	Atlantic Publishers & Distributors, New Delhi
2.	William G. Flanagan	Urban Sociology-images and Structures	2010	Rowman & Littlefield Publishers Inc
3.	Mani Monto, L.S. Ganesh & K. Verghese	Sustainability and Human Settlements: Fundamental Issues, Modeling and Simulation	2005	SAGE Publications Pvt. Ltd, New Delhi
4.	Dr. D N Dwivedi	Principles of Economics	2006	Vikas Publishing House
5	Karl E. Case	Principles of Economics	2009	Pearson Education
6.	Jhingan, M	The Economics of Development and Planning	1998	Vrinda Publications, Delhi,

List of Exercises / Practicals:	
1.	Visits to a Village / Small town to ascertain Socio-economic Impact of Development and submit Report.

List of Assignments/Tests:	
1	Test on Unit 1 or Unit 3.
2	Assignment on Unit 2 or Unit 4.

Name of the Course: **M. Planning / M. Tech (Planning): Integrated First Semester**		
Name of the Subject: **PLANNING TECHNIQUES**		
Subject Code: **In.C.1.3**	Semester: **First (Integrated)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: **(3 + 0) = 3**
Teaching Scheme	**Examination Scheme**	
Lecture : **3 hrs/week**	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study Mapping and Survey Techniques and Spatial Standards.**

Objective:

1. **To study the Database for Physical Surveys and Techniques of preparation of Base Maps.**
2. **To study the Methods of Population Forecast and Projections.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Survey Techniques and Mapping** Data base for physical surveys including land use, building use, density, building age, etc., and socio-economic surveys; Survey techniques; Land use classification or coding and expected outputs; Techniques of preparing base maps including understanding the concepts of scales, components and detailing for various levels of plans like regional plan, city plan, zoning plan, and local area plan.	12
Unit - 2	**Analytical Methods** Classification of regions, delineation techniques of various types of regions, analysis of structure of nodes, hierarchy, nesting and rank size; Scalogram, sociogram, etc.; Planning balance sheet; Threshold analysis; Input output analysis, SWOT analysis;	15
Unit - 3	**Demographic Methods** Methods of population forecasts and projections; Lorenz Curve, Ginni Ratio, Theil's index, rations: urban – rural, urban concentration, metropolitan concentration; Location dimensions of population groups – social area and strategic choice approach – inter connected decision area analysis.	12
Unit - 4	**Planning Standards** Spatial standards, performance standards and benchmarks, and variable standards; UDPFI guidelines, zoning regulations and development control rules and regulations.	9

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1	Margaret Robert	A introduction to town planning techniques	1974	Hutchinson Educational, University of California
2	Lewis B. Keeble	Principles and practice of town planning	1967	Estates Gazette
3	Ian Braken	Urban Planning Methods	2007	Routledge,
4	Kruekeberg D. A. and Silvers A. A.	Urban Planning Analysis	1988	John Willey and Sons Inc.

List of Exercises / Practicals:	
1	Visit to a Local Body / Development Authority and submit report with relevance to adoption of Planning Techniques by them.
List of Assignments/Tests:	
1	Test on Unit 1 or Unit 2.
2	Assignment on Unit 4.

Name of the Course: **M. Planning / M. Tech (Planning): Integrated First Semester**			
Name of the Subject: **INFRASTRUCTURE AND TRANSPORT PLANNING**			
Subject Code: **In.C.1.4**	Semester: **First (Integrated)**		
Duration: **48 Hours**	Maximum Marks: **100**	Credits: **(3 + 0) = 3**	
Teaching Scheme	**Examination Scheme**		
Lecture : **3 hrs/week**	End Semester Exam: **Marks 50**		
Practical : **--**	Internal Assessment: **Marks 50**		
Aim: **To study the Elements of Infrastructure and Role of Transport in Urban and Regional Planning.**			
Objective:			
1.	**To study the Elements of Physical Infrastructure and its Management.**		
2.	**To study the Basic Principles of Urban Transport Planning and Infrastructure.**		
Pre-Requisites: --			

Contents		Hrs
Unit - 1	**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.	9
Unit - 2	**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;	15
Unit - 3	**Planning and Management of Municipal Wastes, Power and Fire** Municipal and other wastes – generation, typology, quantity, collection, storage, transportation, treatment, disposal, recycling and reuse, wealth from waste, norms and standards, institutional arrangements, planning provisions and management issues. Power – Sources of power procurement, distribution networks, demand assessment, norms and standards, planning provisions and management issues. Fire – History of fire hazards, vulnerable locations, methods of fire fighting, norms and standards, planning provisions and management issues.	9
Unit - 4	**Transport Infrastructure Planning, Management and Design** Role of transport, types of transport systems, evolution of transport modes, transport problems and mobility issues**;** Urban form and Transport patterns, land	15

	use – transport cycle, concept of accessibility; Hierarchy, capacity and geometric design elements of roads and intersections**;** Basic principles of Transport infrastructure design; Traffic and transportation surveys and studies, traffic and travel characteristics; Urban transport planning process – stages, study area, zoning, data base, concept of trip generation Transport, environment and safety issues; principles and approaches of traffic management, transport system management.	

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1	Mohinder Singh and L.R. Kadiyali	Crisis in road transport	1989	Konark Publishers Pvt. Ltd. , New Delhi
2	L. R. Kadiyali	Traffic engineering and transportation planning	2007	Khanna Publishers, New Delhi
3	Mukerjee S. and Chakraborty D. (Eds)	Environmental scenario in India	2012	Routledge, London
4	Sameer Kochhar, Deepak B. Phatak, H. Krishnamurthy, Gursharan Dhanjal, (eds)	Infrastructure and Governance	2008	Academic Foundation, New Delhi

List of Exercises / Practicals:

1	Visit to a Local Body / Development Authority and submit report relevant with Infrastructure and Transport Planning.

List of Assignments/Tests:

1	Test on Unit 1 or Unit 2.
2	Assignment on Unit 3 or Unit 4.

Name of the Course: **M. Planning / M. Tech (Planning): Integrated First Semester**			
Name of the Subject: **HOUSING ENVIRONMENTS AND PLANNING**			
Subject Code: **In.C.1.5**	Semester: **First (Integrated)**		
Duration: **48 Hours**	Maximum Marks: **100**	Credits: **(3 + 0) = 3**	
Teaching Scheme	**Examination Scheme**		
Lecture : **3 hrs/week**	End Semester Exam: **Marks 50**		
Practical : **--**	Internal Assessment: **Marks 50**		
Aim: **To provide an Exposure to the Basic Housing and Planning Concepts and Issues.**			
Objective:			
1.	**To introduce the Basic Definitions, Concepts and Socio-economic Dimensions related to Housing.**		
2.	**To provide a basic understanding of Housing at the Neighborhood and City level and to appreciate the Housing Sector as an Integral Sector of Overall Town Planning System.**		
Pre-Requisites: --			

Contents		Hrs
Unit - 1	**Concepts and Definitions** Shelter as a basic requirement, determinants of housing form, Census of India definitions, Introduction to policies, housing need, demand and supply, dilapidation, structural conditions, materials of constructions, housing age, occupancy rate, crowding, housing shortage, income and affordability, poverty and slums, houseless population. Various housing typologies viz. traditional houses, plotted development, group housing, multi-storied housing, villas, chawls, etc.	12
Unit - 2	**Social and Economic Dimensions** Housing as social security, role of housing in development of family and community well being, status and prestige related to housing, safety, crime and insecurity, deprivation and social vulnerability, ghettoism, gender issues, housing for the elderly. Contribution of housing to micro and macro economy, contribution to national wealth and GDP, housing taxation, national budgets, fiscal concessions, forward and backward linkages.	12
Unit - 3	**Housing and the City** Understanding housing as an important land use component of city plan / master plan, considerations for carrying out city level housing studies, projections, land use provisions; Suitability of land for housing, housing stress identification, projecting housing requirements, calculating housing shortages, housing allocation.	12
Unit - 4	**Housing Environments** Slums and squatters, night shelters, public health issues related to housing, various theories of housing, concept of green housing, green rating of housing projects; basic services for housing neighborhoods. Approaches to neighborhood living in traditional and contemporary societies, elements of neighborhood structure, Planning and design criteria for modern neighborhoods, norms and criteria for area distribution, housing and area planning standards, net residential density and gross residential density, development controls and building byelaws, UDPFI guidelines, NBC 2005 provisions and Case studies of neighborhood planning.	12

Text / Reference Books:				
S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Dwyer, D.J.	People and Housing in Third World Cities	1981	Orient Longman
2.	Beyer Glen H,	Housing : a factual analysis	1958	The Macmillan Co. NY
3.	Abrams, Charles	Man's Struggle for Shelter in an Urbanizing World	1964	MIT, Harvard
4.	Payne, Geofrey	Urban Housing in the Third World	1977	Routledge and Keegan Paul, USA
5.	Al Nichols, Jason Laros	Inside the Civano Project (Green Source Books): A Case Study of Large-Scale Sustainable Neighborhood Development (Mcgraw-Hill's Green source Series)	2009	McGraw-Hill Professional
6.	Douglas Farr	Sustainable Urbanism: Urban Design With Nature	2007	John Wiley & Sons
7.	Aromar Revi	Shelter in India - Sustainable Development Series	1990	StosiusInc / Advent Books Division
8.	International Institute for Energy Conservation	Eco housing Assessment criteria Version II	2009	USAID
List of Exercises / Practicals:				
1	Visit to Regional Office of HUDCO or State Housing Board and submit report.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning): Integrated First Semester**		
Name of the Subject: **BASIC PLANNING TECHNIQUES**		
Subject Code: **In.C.1.6**	Semester: **First (Integrated)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: **(3 + 0) = 3**
Teaching Scheme	**Examination Scheme**	
Lecture : **3 hrs/week**	End Semester Exam: **Marks --**	
Practical : **-- hrs / week**	Internal Assessment: **Marks 100**	

Aim: **To study sources of demographic data and applications for GIS and remote sensing for Urban and Regional Planning.**

Objective:

1. **To study GIS Applications and principles of remote sensing.**
2. **To study sources of demographic data and statistical applications.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**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.	12
Unit - 2	**Remote Sensing** Why remote sensing, aerial and satellite remote sensing, principles of aerial remote sensing, Aerial photo-interpretation, photogrammetry, stereovision, measurement of heights / depths by relief displacement and parallax displacement. Principles of satellite remote sensing, spatial, spectral, temporal resolutions. Applications in planning, population estimation, identification of squatter / unauthorized areas, sources of pollution, etc., spatial resolution related to level of Planning	12
Unit - 3	**Demography** Sources of demographic data in India, Settlement type, growth pattern and structure: urban settlement analysis, Concentration: spatial, vertical and size, peri-urban sprawl, economic base; Rural Settlements – Size, occurrence and character, transformation, Policies towards various size class settlements. Population structure and composition – Age, sex, gender, marital status, caste, religion, literacy level, etc.; Age - sex ratio, structure, pyramid; dependency ratio; occupational structure; Fertility; mortality, migration analysis, natural growth of population, migration and its implications in spatial planning;	12
Unit - 4	**Statistical Applications** General concepts - statistical interference, population and samples variables, Sampling, simple statistical models, Measures of central Tendency, Measures of Dispersion, Measures of shape of distribution, Correlation and regression.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Longley Paul, A.,	Geographic Information	2001	John Wiley & Sons Ltd., New

	et. al	Systems and Science		York.
2.	Bhatia, S.C.	Fundamentals of Remote Sensing	2008	Actantic Publishers, Delhi
3.	Sinha, V.C. and Acharia, E.	Elements of Demography	1984	Allied Pub., Delhi
4.	Dixon, W.J. and Massey, F.J.	Introduction to Statistical Analysis	1951	McGraw Hill, New York.
List of Exercises / Practicals:				
1	Visit to NSO and Institute of Remote Sensing or Organizations using GIS and submit report.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 3 or Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning): Integrated First Semester**		
Name of the Subject: **PLANNING STUDIO**		
Subject Code: **In.L.1.1**	Semester: **First (Integrated)**	
Duration: **192 Hours**	Maximum Marks: **400**	Credits: (0 +8) = **8**
Teaching Scheme	**Examination Scheme**	
Lecture : **-- hrs/week**	End Semester Exam: **Marks 150**	
Practical : **12 hrs / week**	Internal Assessment: **Marks 250**	

Aim: **To provide Appreciation of Site Planning, Area Planning, and City Development Plan.**

Objective:

1. **To understand Development Issues.**
2. **To appreciate Contextual location of Area in relation to City.**

Pre-Requisites: --

Contents

First Assignment

Film Appreciation (Individual Assignment)

Films related to city development and socio-economic issues will be screened for students. The purpose of these films is to educate the students' understanding of various development issues and to absorb them in the planning practice. At the end of the film, a discourse around the film will also be held.

After viewing the films, each student is expected to write about its main focus, city / region context, its applicability to Indian environment by answering the given questions in not more than half a page.

Second Assignment

Literature Review (Individual Assignment)

Each student is expected to read the article given from a journal / book and write a summary of not more than a page (250 words only) highlighting the problem, approach, methodology, analysis, how the author arrived at the conclusion and its relevance to Indian context. There will be a negative marking for writing the same text as in the original (that is copying from the original text given to them).

Third Assignment

Area Appreciation (Individual Assignment)

The aim of the area appreciation exercise is to enable the students to understand and contextualize 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.

Due to the size of the area, this exercise is done in groups of students being assigned to a particular area.

The following planning issues at area level should be identified:

- Review of the Master Plan / Zonal / Area plan in relation to the selected areas.
- Appreciation / Analysis of ward level data.
- Perception of areas in terms of legal / illegal / authorized / unauthorized, Slums, Urban Aesthetics.
- Social Categorizations of people - Type of population living, people's perception about area and its planning problems.

- Land use including Agriculture land and land use conflicts, extent (%) of broad land use such as commercial, industrial, residential, institutional and recreational.
- Extent of formal / informal activities present in the area including their location and conflicts.
- General land tenure of the area and land value for different uses.
- Major types of transport, type of roads, hierarchy of roads, type of transport modes used.
- Amenities: Location of Social and Physical infrastructure and their problems as perceived by local population. Look for specific infrastructure such as Water supply, drainage (water logging areas), waste collection and disposal system, sanitation, etc.
- Environmental Issues: Open Spaces – Availability and extent of open space to built-up area, garbage disposal, encroachment (through photographic evidences and sketches).
- Locating the study area in the zone, city and regional context with respect to all the above aspects.

Fourth Assignment

Site Planning (Individual Assignment)

Site planning is a process whereby the optimum utilization of potential of site is considered recognizing the constraints the site has. It uses 3 dimensional space of the site and the associated locational advantages, human activities and the regulations that are assigned to a particular site.

The site is developed using a set of standards / norms in a given context which varies from location to location. A student is expected to understand the intricacies and interface between various variables such as soil conditions, topography, environmental dimensions, location, spatial standards applicable to the site, etc.

Fifth Assignment

City Development Plan (Group Assignment)

A City is a multi-dimensional, dynamic and a futuristic space. Understanding city involves appreciating this multi direction, and include them in the city making process. A job of physical planner does not merely understand the current conflict in development but to emerge out of this and to come out with a vision for the city. To arrive at this vision, a planner needs to understand the dynamics of various components of the city and how and what level interventions can be made to achieve that vision.

A group of students are expected to study a city in terms its present problems and issues and project a futuristic vision in terms of scenario building.

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Lynch, Kevin	Site Planning		
2.	Smith, Carl, et. al.,	Residential Landscape Sustainability – A Checklist Tool	2008	Blackwell Pub., Oxford
3.	Ministry of Urban Development	Revised Tool Kit for Preparation of CDP	2009	Government of India, New Delhi

List of Exercises / Practicals:

1	Visit to Local Planning Agency and Field Visit for Data Collection and submit Report.

List of Assignments/Tests:

1	Marked Reviews on all Units.
2	Internal and External Jury.

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Urban Planning**		
Name of the Subject: **CITY AND METROPOLITAN PLANNING**		
Subject Code: **UP.C.2.1**	Semester: **Second (Urban Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study the Growth of Metro and Mega Cities and their relationship with their respective Regions; and spatial planning approaches for their Planned Development.**

Objective:

1. **To study City – Region Linkages and problems of Metro and Mega Cities.**
2. **To study Urban Development Policies and Problems.**

Pre-Requisites: --

Contents		Hrs
Unit – 1	**Urban Growth and System of Cities** Growth of cities scale, complexity and its impact on national development, cities as engines of growth, cities as ecosystems, resources in cities.	9
Unit – 2	**City – Region Linkages** City, fringe and the periphery - physical and functional linkages, peri-urban development.	9
Unit – 3	**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.	15
Unit – 4	**Human Settlement Planning, Urban Development Policies and Programmes** Concepts, approaches, strategies and tools; Policies and programmes at various levels, impact on metro and mega city development.	15

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	ITPI	City and Metropolitan Planning and Design		ITPI, New Delhi
2.	Ramachandran, R	Urbanization and Urban Systems in India	1998	Oxford University Press, New Delhi
3.	Bawa, V. K.	Indian Metropolis: Urbanization, Planning and Management	1987	Inter-India Publications, New Delhi
4	MMRDA	Madras 2011: A New Perspective for Metropolitan Management	1991	MMRDA, Chennai
5	NCRPB	Regional Plan 2021	2005	NCRPB, New Delhi

6	DDA	Master Plan for Delhi 2021	2010	DDA, New Delhi
7	Misra, R.P. & Misra, K.	Million Cities of India Vol. 1&2	1998	Sustainable Development Foundation, New Delhi
List of Exercises / Practicals:				
1	Visit to a City / Metropolitan Planning and Development Agency and submit report.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 3 or Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Regional Planning**		
Name of the Subject: **INFRASTRUCTURE PLANNING**		
Subject Code: U**P.C.2.2**	Semester: **Second (Regional Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : **3 hrs/week**	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study the Significance of Infrastructure in Urban and Regional Planning and Development.**

Objective:

1. **The Role and Significance of Infrastructure in Habitat Planning and in inducing Peoples' Participation in the Planning Process.**
2. **To understand the importance of different Sectors and their Mutual Interdependence.**

Pre-Requisites: --

Contents		Hrs
Unit – 1	**Water Supply and Sanitation** Quantity and quality, source of supply, transmission and distribution, treatment methods, design guidelines. Sanitation – concepts, disposal systems, low cost sanitation options; engineering aspects of sewage disposal; Wastewater – generation, disposal system Storm water drainage – systems	12
Unit – 2	**Solid Waste Disposal and Management** Basic principles, generation, characteristics, collection, disposal, management.	12
Unit – 3	**Fire and Electrification, and Social Infrastructure** Planning for fire protection, services and space standards, location criteria; Planning for Education, health, civic, cultural infrastructure	12
Unit – 4	**Traffic and Transportation** Planning for infrastructure and facilities for transport	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1	Gathe Donald E.; Billings, R. Bruce; Buras, Nathan,	Managing urban water supply	2003	Dordrecht, Kulwer Academic Press.
2	Ghosh, G.K.	Water of India	2000	A.P.H. Publishing Corporation
3	Yadav, Satish	Water Problems and its Management,	2004	Hope India Publications
4	W'Mays Larry	Urban Water Supply Handbook	2002	McGraw Hill Handbook
5	Butter, David	Urban Drainage	2004	David Butter & John W. Davis Spon Press (IInd Edition) London & New York, 2004.

6.	Nathanson, J.A.; John, P.E., Wiley & Sons, N.R. Brisbane	Basic Env. Technology: Water Supply, Waste Disposal & Pollution Control.	1986	
7.	Bandela, N.N.; Tare, D.G.	Municipal Solid Waste Management	2009	B.R. Publishing
8.	Holmes, J.R.	Manual on Municipal Solid Waste Management, , The Expert Committee GoI, MoUD, CPNEEO 2000 Managing Solid Waste in Developing Countries	1984	John Pub. John Wiley & Sons, Singapore.
List of Exercises / Practicals:				
1	Visit to a Infrastructure Development Agency and submit report.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Urban Planning**		
Name of the Subject: **URBAN HERITAGE CONSERVATION**		
Subject Code: **UP.C.2.3**	Semester: **Second (Urban Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To develop Understanding with relevance to Sustainable Urban Heritage Conservation.**

Objective:

1. **To study Natural and Cultural Heritage Conservation.**
2. **To study Policies, Programmes and Legislation for Heritage Conservation.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Introduction to Urban Heritage** Typology / classification, inventories, mapping; Human habitation in historical context; Heritage as a motivating force in sustainable urban conservation and development,	9
Unit - 2	**Heritage Conservation** Natural heritage conservation - typologies, policies for conservation, regulatory measures, community participation; Concept of Historic Urban Landscapes; Built heritage conservation - determinants of built form on heritage; Historic urban infrastructure and traditional water harvesting systems. Integration of historic monuments / areas / cores / urban systems in the developmental process and land use, regulatory measures and community involvement; Intangible cultural heritage and development: issues, conservation strategies. Preparation of conservation and heritage management plans.	15
Unit - 3	**Heritage and Tourism, Policies and Programmes, Legislation** Cultural and heritage based tourism - nature, potential and prospects, marketing aspects; Acts and laws recognizing conservation / regeneration; Heritage toolkit; Implications of 74th Constitution Amendment Act.	9
Unit - 4	**Design in Human Habitation** Social / cultural / ecological / energy determinants of design; Imagibility of the city; Structure of urban spaces – location criteria of activities and urban uses; Urban Regeneration, renewal, rehabilitation, revitalization, reconstruction and redevelopment - concepts, interventions, processes, approaches and methods, tools.	15

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Luigi Fusco Girard and Peter Nijkamp (editors)	Cultural Tourism and Sustainable Local Development	2009	Ashgate, Burlington

2.	Nirmala Rao Khadpekar	Urban revitalization : perspectives and initiatives /	2008	ICFAI University Press
3.	Richard Longstreth (editor)	Cultural Landscapes: Balancing Nature and Heritage in Preservation Practice	2008	University of Minnesota Press
4.	Cohen, Naoum	Urban Planning Conservation and Preservation	2001	McGraw-Hill
5.	Ismailb Serageldin, Ephim Shluger, Joan Martin-Brown (editors)	**Historic Cities and Sacred Sites:** Cultural Roots for Urban Futures	2001	The World Bank
List of Exercises / Practicals:				
1	Visit to a Heritage Conservation Site and submit report.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Urban Planning**		
Name of the Subject: **ADVANCED PLANNING TECHNIQUES**		
Subject Code: **UP.C.2.4**	Semester: **Second (Urban Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study Advanced Planning Techniques.**

Objective:

1. **To study Surveying Techniques and GIS Mapping.**
2. **To study Analytical Planning Techniques, Report Writing and Presentation.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Survey Techniques** Data Base for Physical surveys (including land use / building use / density / building age, etc.) and Socio-economic surveys; Questionnaire formulation, Sampling and survey techniques, etc. Land use classification / coding.	9
Unit - 2	**GIS Mapping** Coordinate system, Geo-referencing and geo-coding; 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).	15
Unit - 3	**Research Design and implementation** Approaches in research, developing a method for research; Questionnaire Design, Types of data, sampling methods; developing aims, objectives, scope, limitations; and literature research – using library, accessing the Internet	9
Unit - 4	**Analytical Techniques, Presentation and Report Writing** Data tabulation; Interpretation of information; Graphical presentation of data; Spatial representation of data; Types of reports with specific focus on technical report writing; Organizing the report, structure chapter organization, Writing the report (analytical findings); Referencing in text, use of software in referencing	15

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1	Groves R.M. Fowler F.J., Couper M.P., Lepkowski J.M., Singer E., Tourangeau R.,	Survey Methodology	2009	John Wiley and Sons
2	Easa S., Chan Y., (ed)	Urban Planning and Development, Application of	2000	American Society of Civil Engineers,

		GIS		
3	John W. Creswel	Research Design	2003	Sage Publication, California
4	Glatthorn A. A, and Joyner R. L.	Writing the winning thesis	2005	Corwin Press, California
List of Exercises / Practicals:				
1	Visit to a Division / Department of Local Bodies / Development Authority dealing with Surveying Techniques and submit report.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Urban Planning**		
Name of the Subject: **URBAN PLANNING STUDIO - I**		
Subject Code: **UP.C.2.5**	Semester: **Second (Urban Planning)**	
Duration: **240 Hours**	Maximum Marks: **500**	Credits (2 + 8) = **10**
Teaching Scheme	**Examination Scheme**	
Lecture : **3 hrs/week**	End Semester Exam: **Marks 200**	
Practical : **12 hrs / week**	Internal Assessment: **Marks 300**	
Aim: **To carry out City Based Study focusing Planning and Design.**		
Objective:		
1.	**To Assess, Collect and Analyze the Information Requirements for the Study.**	
2.	**To understand the Characteristics of the City for Preparation of Sustainable Development Plan.**	
Pre-Requisites: --		

Contents		Hrs
Unit - 1	**Geo-Informatics Laboratory Training** The laboratory training will be conducted in accordance with the studio exercise. Introduction to Geo-informatics, introduction to Remote Sensing – Aerial and Satellite; introduction to GIS, Spatial data and Attribute data; Satellite images as input to GIS; Collection and presentation of baseline information.	75
Unit - 2	**Development Plan** The studio exercise focuses on the planning, development and design aspect (in line with the other core and elective courses offered in the semester). The exercise pertains to large cities and emerging metropolitan cities and ranges from preparation of sustainable development plans to sector specific themes pertaining to tourism, SEZs, etc. The studio exercise enables students to develop an approach/ framework for the task; it is field based as a database is generated that is analyzed and the plan and strategies are formulated. Initial study involves understanding of the exercise through theories, study of similar 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 to the studio exercise. The introduction of GIS in the studio enables them to apply it in the studio exercise. Students are expected to analyze the data collected and come out with proposals and recommendations for planned development of the city. The entire exercise is also documented in the form of a technical report. The second exercise is a short and intensive exercise of one-month duration. It pertains to topical issues i.e. property tax reforms, informal sector, development of railway land, etc. The study is based on primary surveys and students are expected to analyze the information and arrive at recommendations.	165

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher

1.	Dellinger, A.	Validity and the Review of Literature, Review in the Schools	2005	
2.	Hart, C.	Doing a Literature Review, Releasing the Social Science Research Imagination	198	London: Sage and Open University.
3.	Taylor, G.	A Student's Writing Guide: How to Plan and Write Successful Essays	2009	Cambridge University Press
4.	Colin Neville, Neville, C.	The Complete Guide to Referencing and Avoiding Plagiarism	2007	McGraw-Hill International
5.	Punch, Keith	An Introduction to Social Research: Quantitative and Qualitative Approaches	2005	Sage
6.	Neuman, William	Basics of Social Research: Qualitative and Quantitative Approaches	2007	Pearson, Allen and Bacon
7.	Bryman, Alan	Social Research Methods	2008	Oxford University Press
8.	Finlay, B.	Statistical Methods for the Social Sciences	2009	Pearson Publisher University of Florida, US
List of Exercises / Practicals:				
1	Visit to the case study town and submit report.			
List of Assignments/Tests:				
1	Marked Reviews of Unit 1 and Unit 2.			
2	Internal and External Jury.			

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Urban Planning**		
Name of the Subject: INCLUSIVE URBAN PLANNING (ELECTIVE)		
Subject Code: **UP.E.2.1**	Semester: **Second (Urban Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study the various Forms, Arenas and Uses of Inclusion in the Processes of Urban and Regional Planning.**

Objective:

1. **To study Significance of Inclusion in Planning and Development Process.**
2. **To study Policies, Programmes and Legislation for Participatory Planning.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Understanding Inclusive Planning** Definitions and components	9
Unit - 2	**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	15
Unit - 3	**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.	12
Unit - 4	**Planning interventions** Inclusive zoning, development and building regulations, Slum Improvement.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1	Datta, A.	The Illegal City: Space, Law and Gender in a Delhi Squatter Settlement,	2012	Ashgate, Burlington.
2	Roy, A. and Ong, A. (Eds.)	Worlding Cities: Asian Experiments and the Art of Being Global	2011	Wiley Blackwell, London.
3	Eijk, G.V.	Unequal Networks: Spatial Segregation, Relationships and Inequality in the City	2010	IOS Press, Amsterdam.
4	Harriss, J.	Antinomies of Empowerment: Observations on Civil Society, Politics and Urban Governance in India, Economic and Political	2007	

		Weekly, Vol.42, No.26, pp.2716-2724.		
List of Exercises / Practicals:				
1	Visit to a Local Body / Authority and submit a Report with focus on Inclusive Planning being practiced by them.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 3 or Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Urban Planning**		
Name of the Subject: **PLANNING FOR TOURISM (ELECTIVE)**		
Subject Code: **UP.E.2.2**	Semester: **Second (Urban Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study the Role of Tourism in Urban and Regional Planning.**

Objective:

1. **To study Tourism and its Relevance in Urban Development**
2. **To study Policies and Programmes of Tourism so as to ascertain parameters for Planning for Tourism Sector.**

Pre-Requisites: Basic awareness of the importance of tourism and its impact on urban development.

Contents		**Hrs**
Unit - 1	**Introduction to Tourism** Definitions, scope, nature, classification and dimension, tourism as an industry, tourism in developed and developing world.	9
Unit - 2	**Tourism Sector – impacts** Relationship between Tourism and Urban Development, Tourism multiplier and forecasting methods: capacity building and carrying capacity planning for tourism projects, tourism and cultural and social change: Socio-cultural problems, environmental degradation.	15
Unit - 3	**Planning for Tourism** Nature and scope of a tourism plan- key issues and stages, data requirements, surveys, role of key players / stake holders in tourism policy and planning, sustainable tourism development planning; community planning and tourism; implementation and management, role of travel and tourism promoting agencies, monitoring the tourism development; Tourism marketing - concept, techniques and strategies.	15
Unit - 4	**Policies and Programmes** Tourism policies at various levels.	9

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Charles R. Goeldner , J. R. Brent Ritchie	Tourism: Principles, Practices, Philosophies	2009	John Wiley & Sons
2	A. SatishBabu	Tourism Development in India	2008	APH Publishing Corporation , New Delhi
3	Christopher M Law	Urban Tourism: The Visitor Economy and the Growth of Large Cities	2009	Continuum
4.	K.K. Sharma	Planning for Tourism	2003	Sarup & Sons, New Delhi

5.	Planning Commission	Working Group Report on Tourism (2012-2017)	2012	Planning Commission, Government of India
6.	Ministry of Tourism	Strategic Action Plan for Tourism in India	2011	Ministry of Tourism, Government of India
List of Exercises / Practicals:				
1	Visit to Ministry / Department of Tourism / ITDC / State Tourism Development Corporation / Tourism based City and Submit Report.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 3.			

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Urban Planning**		
Name of the Subject: **URBAN DEVELOPMENT AND MANAGEMENT**		
Subject Code: **UP.C.3.1**	Semester: **Third (Urban Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study the Processes and Management of Urban Planning and Development.**

Objective:

1. **To comprehend the various Facets of Urban Development and Management.**
2. **To understand the how decisions pertaining to Supply of Land and Built Environment are taken.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Introduction to Development Management** Concept, approaches, components, interfaces with national goals and political economic system.	9
Unit - 2	**Urban Development Management** Strategies, Tools and Techniques; organizations involved	12
Unit - 3	**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.	15
Unit - 4	**Information System and Urban Reforms** Spatial and Non - spatial information systems; Urban reforms and acts and policies.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1	Rakodi, C. and Llyod-Jones, T.	Urban Livelihoods: A People-Centered Approach to Reducing Poverty.	2002	Earthscan, London
2	Datta, A.	The Illegal City: Space, Law and Gender in a Delhi Squatter Settlement	2012	Ashgate, Burlington
3	Roy, A. and Ong, A. (eds.)	Worlding Cities: Asian Experiments and the Art of Being Global	2011	Wiley Blackwell, London
4				

List of Exercises / Practicals:

1	Visit to development project undertaken by Local body and submit a report.

List of Assignments/Tests:	
1	Test on Unit 1 or Unit 2.
2	Assignment on Unit 3 or Unit 4.

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Urban Planning**			
Name of the Subject: **PROJECT PLANNING AND MANAGEMENT**			
Subject Code: **UP.C.3.2**	Semester: **Third (Urban Planning)**		
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3	
Teaching Scheme	**Examination Scheme**		
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**		
Practical : **--**	Internal Assessment: **Marks 50**		
Aim: **To study Project Planning, Management and Implementation Techniques.**			
Objective:			
1.	**To study relationship between Projects and Planning at various Levels.**		
2.	**To study Management, Implementation and Evaluation of Projects.**		
Pre-Requisites: --			

Contents		Hrs
Unit - 1	**Project planning** Introduction to Projects; Nature of planning projects; Project Life Cycle; Identification of projects	9
Unit - 2	**Project Formulation and Appraisal** Relationship between projects and planning issues including sectoral policy at: Local, State and National levels Project appraisal: Market analysis – Macro environment survey, survey methods, market characterization, demand forecasting; Technical Analysis – Magnitude, processes, materials, equipment, factors of production availability, implementation schedule; suitability of the plans, layout and design, location of the project; location analysis; supporting infrastructure requirements- Capital Budgeting – Estimation of costing of components; developing over project cost; Social cost benefit analysis – UNIDO, Merles, ZOPP/GOPP, etc.	15
Unit - 3	**Project Management and Implementation, and Project Evaluation and Monitoring** Project characteristics - pitfalls in management of a project; Techniques of management; Planning milestones - responsibility charts and principle responsibility, principles of activity planning; Project Implementation – methods, hurdles, facilitative factors; Project culture: line management, steering committee, role of project manager; Project Control: cost and time, quality - ISI standards and its application to Indian context; Introduction to Project Management Software (Ms Projects) and its usage. Types of evaluation - concurrent, ex-ante and ex-post. Methods of evaluation, techniques of evaluation, end results, Presentation of evaluation findings, Techniques of Monitoring of Development Works.	12
Unit - 4	**Regulatory Frameworks Governing Projects** National Rehabilitation and Resettlement Policy (2007) - Social Impact mitigation; National Environmental Policy (2006) – Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP)	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Prasanna Chandra	Projects	2009	McGraw Hill, New Delhi.

2.	Barker, Stephen and Cole, Rob.	Brilliant Project Management	2007	Pearson Education Limited, UK
List of Exercises / Practicals:				
1	Visit to a Local Body / Development Authority and submit report on the large scale project being undertaken by them.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Urban Planning**		
Name of the Subject: **URBAN GOVERNANCE**		
Subject Code: **UP.C.3.3**	Semester: **Third (Urban Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study the Role of Government, Private Sector and the Third Sector for Governance of Cities and Regions.**

Objective:

1. **To study the Role of the States in Urban and Regional Planning at National, State and Local levels.**
2. **To study the Decision Making Processes and Organizations Responsible for the Planning, Finance and Delivery.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Overview of Urban Governance** Definition, concepts, components, government and governance, hierarchy and structure, forms of governance, process of inclusion and exclusion,	9
Unit - 2	**Legislations pertaining to Urban Governance** Institutional frame and mechanism for urban governance as envisaged in the 73rd and 74th Constitution Amendment Acts.	12
Unit - 3	**Institutions and Organizations** Differences between 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.	15
Unit - 4	**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.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1	Rhodes, R.A.W.	Understanding Governance: policy networks, governance, reflexivity and accountability.	1997	Open University Press, Maidenhead, GB, Philadelphia
2	Jayal, N.G., Prakash, A. and Sharma, P.K.	Local Governance in India: decentralization and beyond.	2006	Oxford University Press, New Delhi
3	Baud, I.S.A. and Wit, J. de	New Forms of Urban Governance in India: shifts, models, networks and contestations	2008	Sage New Delhi.

List of Exercises / Practicals:	
1	Visit to a Local Body and submit Report on their Decision Making Process.
List of Assignments/Tests:	
1	Test on Unit 1 or Unit 2.
2	Assignment on Unit 4.

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Urban Planning**		
Name of the Subject: **POLITICS AND PLANNING**		
Subject Code: **UP.C.3.4**	Semester: **Third (Urban Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To understand the Two Way Relationship Between Politics and Planning.**

Objective:

1. **To develop a Comprehension of the Interplay of Politics in the Planning Process.**
2. **To understand the Social, Economic and Cultural Contexts of Politics and Planning and how it influence Development / Provision / Financial / Management of Resources and other Basic Infrastructure.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Interface between Politics and Planning** Social and economic context; State in India – political culture of the Indian State – Centre – State – Local political economy: 74th Constitution Amendment Act, State Finance Commissions; Emergence of the State in the federal set up.	12
Unit - 2	**City and the State** State as a manager of resources – property rights, norms and standards – Government market and market by Government – Regulatory State, Reforming State, and Rent Seeking State – their spatial implications; Development planning and the Indian state – Centralization, powerlessness and decentralization; spatial politics and competition; Politics of the State and bureaucracy; New State spaces, invited and contested spaces – changing role of the state.	12
Unit - 3	**Politics related to Planning and Development** Politics related to land, shelter, urban infrastructure, resources; Regeneration and redevelopment politics; politics of provision, financing and pricing; decision-making and decision taking.	12
Unit - 4	**Politics and Civil Society** Politics and emergence of civil society – NGO, CBO and their role in planning, development and management, collective bargaining and collective action.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Sarma, KSRN	Financing Urban Development in India	1979	IIPA, New Delhi
2.	Maarten, A.H.	City Politics	1989	Aldershot, Avebury
3.	Sharan, P.	Government and Politics of India	1984	New Delhi, Metropolitan Book
4.	Vettivel, Surendra, K.	Participation of Sustainable Development: Theory and	1993	New Delhi, Vetri Publishers

		Practice in Government and NGOs		
List of Exercises / Practicals:				
1	Visit to a NGO or CBO and submit report on their Role in Planning and Development.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Urban Planning**		
Name of the Subject: **URBAN PLANNING STUDIO - II**		
Subject Code: **UP.C.3.5**	Semester: **Third (Urban Planning)**	
Duration: **240 Hours**	Maximum Marks: **500**	Credits: (0 + 10) = **10**
Teaching Scheme	**Examination Scheme**	
Lecture : **-- hrs/week**	End Semester Exam: **Marks 200**	
Practical : **15 hrs / week**	Internal Assessment: **Marks 300**	

Aim: **To undertake City based study focusing on Management and Governance.**

Objective:

1. **Introduction to Geo-informatics, satellite images and Remote Sensing.**
2. **To assess the status of the Case Study City, to prepare Management Plans, to identify and formulate Projects, to prepare DPR covering Physical, Environmental aspects, sequence of tasks, Cost Estimates, Project Benefits, and Institutional Framework for Project Implementation.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Geo-Informatics Laboratory Training** The laboratory training will be conducted in accordance with the studio exercise. Introduction to Geo-informatics, introduction to Remote Sensing – Aerial and Satellite; introduction to GIS, Spatial data and Attribute data; Satellite images as input to GIS; Collection and presentation of baseline information.	75
Unit - 2	**Management and Governance Plans** The focus of the studio is on management and governance aspects (in line with the other core and elective courses offered in the semester). The exercise pertains to metropolitan cities and mega cities and ranges from preparing management plans and projects related to various sectors pertaining to infrastructure, disaster risk, riverfront development etc. Students are also required to identify and formulate projects, work out the appraisals and do the feasibility, viability and implementation mechanisms of the projects. Students work on a case study town/city and have to visit the field for collection of data and interaction with city officials and stakeholders. Although planning continues to be an important aspect of the exercise, students are also exposed to project identification, formulation, and appraisal, financing mechanisms and institutional framework. Students draw from the theoretical knowledge provided in the core and elective subjects related to management, finance and governance offered in the semester and translate them in their studio exercise. The culmination of the exercise is in the form of group presentations and studio report.	165

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Goodman, L.T.; Love; Ralph N.	Project Planning and Management: an Integrated Approach	1980	Pergamon Press, NY
2.	Little, IMD, Mirrlees, J.A.	Project Appraisal and Planning for Development Countries	1974	London, Heinemann Educational Books

3.	Rougvie, Alexander	Project Evaluation and Development	1987	London, Mitchell Publishing
4.	Choudhury, S.	Project Management	1988	New Delhi, Tata McGraw-Hill
List of Exercises / Practicals:				
1	Visit to a Municipal Corporation and submit report on their approach for preparing of DPR.			
List of Assignments/Tests:				
1	Marked Reviews of Unit 1 and Unit 2.			
2	External and Internal Jury.			

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Urban Planning**		
Name of the Subject: **ENVIRONMENT, DEVELOPMENT AND DISASTER MANAGEMENT (ELECTIVE)**		
Subject Code: **UP.E.3.1**	Semester: **Third (Urban Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : **3 hrs/week**	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: To study Disaster Management Practices and Mitigation Measures and their Impact on Environment and Development

Objectives:

1. **To understand the Interface between Environment and Development with a focus on Disaster Management.**
2. **To study the Disaster Mitigation Measures and Related Legislation of Environment and Disaster Management / Mitigation.**

Pre-Requisites: --

Contents		**Hrs**
Unit - 1	**Environment, Development and Disaster Management – Interface** Resource use, exploitation and conservation; Impact of human activities on environment; Environment and economy interaction, introduction to environmental accounting.	12
Unit - 2	**Environmental Management** Environmental Impact Assessment, thresholds, indicators, audits, environmental certification, lifecycle analysis, environment and poverty links, environmental policy, Acts and regulations; Environmental education, participatory approaches, emerging concepts. Disaster classification, concepts, hazards, vulnerability, risks, human response to disaster, impacts	12
Unit - 3	**Disaster Mitigation and Management** Relevance of disaster management in development and environment, disaster preparedness, prevention, displacement and development, Role and responsibilities of government and non–government organizations, Disaster Education – awareness of individuals, communities and participation at various levels; Integrating disaster mitigation in the spatial planning process, provision of infrastructure for disaster mitigation.	15
Unit - 4	**Policies and Legislation Pertaining to Environment and Disaster Management** Policies and Legislation at various levels.	9

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Rajib Shaw	Community, Environment and Disaster Risk Management	2010	Emerald Group Publishing Limited
2.	Rajib Shaw Hari Srinivas, Anshu Sharma	Urban Risk Reduction An Asian Perspective	2009	Emerald Group Publishing Limited

3.	P C Sinha	Introduction to Disaster Management	2007	Anmol Publications, New Delhi
4.	Pardeep Sahni, Alka Dhameja, Uma Medury	Disaster Mitigation: Experiences and Reflections	2008	PHI Learning Pvt. Limited, New Delhi
5.	Jegadish Gandhi P	Disaster Mitigation & Management Post Tsunami Perspectives	2007	Deep & Deep Publications Pvt Ltd, New Delhi
6.	NDMA	Disaster Management Guidelines	2007-11	NDMA
7.	Ministry of Home Affairs	Model Amendment in Town and Country Planning Legislations, Regulation for Land Use Zoning and Building Byelaws for Structural Safety	2004	MHA
8.	Ministry of Home Affairs	National Policy on Disaster Management(NPDM)	2006	MHA

List of Exercises / Practicals:	
1	Visit NDMA / NIDM and submit the report.

List of Assignments/Tests:	
1	Test on Unit 1 or Unit 2.
2	Assignment on Unit 3.

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Urban Planning**		
Name of the Subject: **ENERGY, CLIMATE CHANGE AND URBAN DEVELOPMENT (ELECTIVE)**		
Subject Code: **UP.E.3.2**	Semester: **Third (Urban Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study Interface between Energy, Climate Change and Urban Development.**

Objective:

1. **To study the Determinants of Energy Supply and Demand.**
2. **To study relationship of Plans, Policies and Strategies with reference to Energy Planning.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Introduction** Energy, Climate change and Urban Development – Interface.	9
Unit - 2	**Energy Generation and Consumption** Energy Supply and Demand, Energy Consumption in cities, determinants of energy demand, phenomenon of climate change, factors influencing climate change, impacts of climate change	12
Unit - 3	**Energy Planning and Management, and Mitigation and Adaptation to Climate Change** Energy efficient development, Compact city form, Transit oriented development. Mechanisms and measures for mitigating and adapting to climate change at various levels	15
Unit - 4	**Plans, Policies and Strategies** Related to energy planning, conservation, climate change mitigation and adaptation.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	S.K Dash	Climate change: an Indian perspective, New Delhi	2007	Cambridge University Press
2.	Jenks, Mike; Burgess, Rod	Compact cities: Sustainable urban forms for developing countries	2000	Spon Press, London
3.	Bicknell, Jane	Adapting cities to climate change: understanding and addressing the development Change	2009	Earthscan, London
4.	Andres Duany, Jeff Speck and	The Smart Growth Manual	2009	McGraw-Hill

	Mike Lydon			
5.	David Owen	Green Metropolis: Why Living Smaller, Living Closer, and Driving Less are the Keys to Sustainability	2009	
1	Visit to a Development Authority and submit report, with focus on energy planning.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 3.			

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Urban Planning**		
Name of the Subject: **DEVELOPMENT FINANCE**		
Subject Code: **UP.C.4.1**	Semester: **Fourth (Urban Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture **: 3 hrs/week**	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To provide an Overview of Development Finance.**

Objective:

1. **To study Development Finance covering State Finance and Municipal Finance.**
2. **To analyze Municipal Finance and Investment Planning in relation to Development Activities.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Overview of Development Finance** Approaches, concepts, components, process, credit rating.	9
Unit - 2	**State Finance** Inter-governmental fiscal relationship between Central, State and Urban Local Government.	9
Unit – 3	**Municipal Finance** Urban fiscal reforms, municipal finance and urban inclusion, Sources of revenues and application of money; Equities; Loans; Debt financing; Municipal Bonds, land and non-land based sources; Structure of finances, fiscal problems and issues of financial management, implications of 74th Constitution Amendment Act for municipal finance, expenditure pattern, Bilateral and multi lateral lending institutions mobilizing resources for a project - financial resources, land resources, project resources, and other resources.	15
Unit – 4	**Investment Planning and Financing Mechanism** Link with spatial plans, process, components, investment needs and budgeting for infrastructure and services. Financing of urban development, infrastructure and services – mechanisms and instruments, subsidy reduction, cost recovery, public private partnerships; Financial appraisal, investment appraisal; Financial Risk – Sources, Measures and perspectives on risk, Sensitivity analysis and pricing and cost recovery mechanism.	15

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Mathur, O.P. and Peterson, George	State Finance Commissions and Urban Fiscal Decentralization in India	2006	NIPFP
2.	Ministry of Finance	Report of 13th Finance Commission	2011	Government of India, New Delhi

3.	Government of India	73rd and 74th Constitution Amendment, Acts	1992	Government of India, New Delhi
4.	Pandey, K.K.	Stimulating Revenue Base of ULBs in India	2010	IIPA
List of Exercises / Practicals:				
1	Visit to Finance / Budget Section of Local Bodies and submit report.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 3.			

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Urban Planning**		
Name of the Subject: **LEGAL ISSUES AND PROFESSIONAL PRACTICE**		
Subject Code: **UP.C.4.2**	Semester: **Fourth (Urban Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : **3 hrs/week**	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study Legislations related to Urban Planning and Development and to make students understand their role and responsibilities as professional planner, and equip them with the knowledge, procedures, and legal tools required for Professional Practice in Urban Planning.**

Objective:

1. **To understand the Interface between Legislation and Urban Planning and to study Basic Concept of Law and Indian Constitution and the requirement of various Acts, Laws, Rules and Regulations related to Urban Planning.**
2. **To understand the Scope, Nature and Procedure of Professional Practice; prepare consultancy Proposals and Quote Fees and Charges for Professional Work.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Introduction** Interface between policy and legislation pertaining to urban development.	9
Unit - 2	**Understanding of Law** Concepts, sources, terminologies, 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; 73rd and 74th Constitution Amendment Act, provision regarding property rights.	9
Unit - 3	**Planning Legislation and Policy Formulation and Appraisal** Evolution; An over view of legal tools connected with Urban Planning and Development, Town and Country Planning Act, Improvement Trust Act, Urban Planning and Development Authorities Act – objectives, contents, procedures for preparation and implementation of Regional Plans, Master Plans and Town Planning Schemes. Various Acts related to urban governance, planning and development organizations, land resources, environment protection, and public participation in statutory planning process; Approaches of formulation of policies, appraisal of policies.	15
Unit - 4	**Professional Practice** 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, managerial aspects; Role in inter disciplinary groups: Appreciation of the decision-making processes and the process in relation to varied consultancy assignments of planning.	15

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher

1.	ITPI	Planning Legislation and professional Practice		ITPI, New Delhi
2.	Bijlani, H.U. & Balachandran	Law and Urban Land	1978	IIPA, New Delhi
3.	GoI	UDPFI Guidelines Vol. 2A	1996	ITPI, New Delhi
4.	GoI	Indian Contract Act 1872; Indian Contract Act 1872; The Arbitration and Conciliation Act 1996. Constitution of India; Constitution (73rd & 74th Amendment) Acts 1992; Model Rent control Legislation; Slum (Improvement and Clearance) Act 1956; Land Acquisition Act 1894 and amendments thereof; NCR Planning Board Act, Environment (Protection) Act 1986; Model Town Planning and Regional Planning Development Law; and other acts		
5.	Government of Maharashtra	Maharashtra Regional and Town Planning Act 1966		
6.	Government of various States	State Acts related town planning, slum clearance, municipalities, development authorities, etc.		
7.	Kulshrestha, S. K.	Urban and Regional Planning in India: Handbook for Professional Practice	2012	Sage Publications, New Delhi
8.	ITPI	Conditions of Engagement of Professional Services and Scale of Professional Fee and Charges	2011	ITPI, New Delhi
9.	CPWD	CPWD Manual 2012	2012	CPWD, New Delhi
List of Exercises / Practicals:				
1	Visit to the office of a Senior Planning Professional and submit report, on professional practice.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 3 or Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Urban Planning**		
Name of the Subject: **THESIS**		
Subject Code: **UP.C.4.3**	Semester: **Fourth (Urban Planning)**	
Duration: **384 Hours**	Maximum Marks: **800**	Credits: (0 + 16) = **16**
Teaching Scheme	**Examination Scheme**	
Lecture : **-- hrs/week**	End Semester Exam: **Marks 300**	
Practical : **24 hrs / week**	Internal Assessment: **Marks 500**	

Aim: **To undertake independent study in the field of Urban Planning.**

Objective:

1	**To develop a basic understanding of the area chosen for study (by carrying out a detailed literature review).**
2	**To undertake detailed exploration of the topic (by way of surveys and studies).**
3	**To identify issues and concerns those emerge out of the study and suggest recommendations.**

Pre-Requisites: --

Contents	Hrs
The students are required to carry out independent research and prepare a thesis on a topic on urban planning selected by them and approved the faculty under the supervision of a research guide allocated by the department.	384

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Brubaker, D.L. and Thomas, R.M.	Thesis and Dissertations: A Guide to Planning, Research and Writing.	-	-
2.	Rowena Murray	How to Write a Thesis (3rd Edition)	-	Open University Press
3.	F. Abdul Rahim	Thesis Writing	2005	New Age International (P) Limited Publishers, New Delhi.
4.	Kastens, K. Pfirman, S., Stute, M., Abbott, D. and Scholz, C.	How to Write Your Thesis	-	Colombian University
5.	Bracken, I.	Urban Planning Methods, Research and Policy Analysis	2008	RoutIdge
6.	Wang, X., Von Hofpe, R.	Research Methods in Urban and Regional Planning	2007	Springer
7.	You Tube	Tools for Academic Research in Urban Design and Planning	2011	You Tube Video.

List of Exercises / Practicals:

1	Field visit to Collect Data on selected Topic of Research.

List of Assignments/Tests:

1	Marked Reviews at different Stages of completion of Research work.
2	Internal and External Jury.

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Regional Planning**		
Name of the Subject: **PLANNING FOR REGIONS**		
Subject Code: **RP.C.2.1**	Semester: **Second (Regional Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study Regional Development Dynamics, Structure, Policies and Programmes.**

Objective:

1. **To study Concepts and Typology of Regions and Regional Dynamics.**
2. **To expose students with various Regional Planning and Development Approaches in India.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Concepts and Typology of Regions and Regional Dynamics** Basic Concepts in Regions, Defining a region: fluidity and purposiveness, Typology of Regions: Resource Regions, Mega, Macro, Meso, and Micro Regions; Regional Dynamics: Growth of Mega and Metro Regions: Scale, Complexity and its impact on national and international scenario, convergence and divergence. Regional Economy, competitiveness among regions, backward and leading regions in development; Special Regions: SEZ, Agro Regions, Ecological regions, etc.	12
Unit - 2	**Regions in India and Its Planning** Regions in Indian Context: Resource Regions, Corridors as regions, National, sub-national and State as a region, macro, meso and micro regions in India. Case Studies from India: NCR and Delhi Mega Region, Mumbai Mega Region, Kolkata Metro Region, Chennai Metro Region, and other Metro Regions in India.	12
Unit - 3	**Resource Regions in India** Western and Eastern Ghats, North Eastern Region, Coastal Regions, and River Valley Regions; Corridors: Golden Quadrilateral, Delhi-Mumbai, Chennai-Bangalore Industrial Corridor, North-South and East-West Corridor Regions.	12
Unit - 4	**Core and Periphery in a Region in Indian Context** Core, Fringe and Periphery in a Region and its planning; Tools and techniques available for planning regions in India; Role of 73rd and 74th Constitution Amendment Acts in regional plan preparation and implementation.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Balisacan, Arsenio M., Hill, Hal, (ed)	The Dynamics of Regional Development: The Philippines in East Asia	2007	ADB Institute and Edward Elgar Publishing Ltd., Cheltenham, USA
2.	Chaudhuri, Ray Jayasri	An Introduction to Development and Regional Planning with special reference	2001	Orient Longman Ltd., Kolkata

		to India		
3.	TCPO	Urban and Regional Planning and Development in India	1996	TCPO, New Delhi
4.	Carter, Harold	The Study of Urban Geography	1995	Edward Arnold,
5.	R.P. Misra	Regional Planning, Concept, Techniques, Policies and Case Studies	2002	Concept Publishing Company, New Delhi.
6.	John Glasson and Tim Marshall	Regional Planning	2007	Routledge, Oxford shire.
7.	Peter Hall and Mark Tewdwr-John	Urban and Regional Planning	2008	Routledge, New York
8.	Jayasri Roy Choudhuri	An Introduction to Development and Regional Planning	2001	Orient Longman Ltd, Kolkata.
List of Exercises / Practicals:				
1	Visit to Regional Development Authority and submit report.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 3 or Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Regional Planning**		
Name of the Subject: **INFRASTRUCTURE MANAGEMENT**		
Subject Code: **RP.C.2.2**	Semester: **Second (Regional Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study Regional Infrastructure Planning and Management.**

Objectives:

1. **To understand the relevance of Regional Infrastructure Planning.**
2. **To ascertain the role of water, sanitation, solid waste management, road and energy in Integrated Regional Infrastructure Planning.**

Pre-Requisites: --

Contents		**Hrs**
Unit - 1	**Infrastructure Planning and Importance of Regional Infrastructure** Equity, Access, level and Efficiency, Quality of Service, Paying Capacity, Pricing of Infrastructure Services; Ownership and Control: Public, Private, SPV, and PPP Models in infrastructure provision, Multi-service providers and their operation at various levels. Infrastructure Policy: Regulatory and Facilitative, Investment Requirement at various levels and actual investments in Infrastructure; Role of Infrastructure in regional development, Critical Infrastructure in regional development, and Indicators of infrastructure development in defining regional development, standards and bench marks for infrastructure provision and delivery at various levels; Role of Spatial Information Technology (SDI) in the planning, provision, and monitoring infrastructure.	12
Unit - 2	**Water** Introduction: Sources of water, current scenario: Conflicts and Co-operation – Trans boundary water conflicts: inter-state, international water treaties, National Water Policy, Water Rights: Excess and under utilization of water. Access standards, demand and supply analysis, pricing parameters, conservation issues, technology: extraction, cleansing, recycling and reuse. Pollutions associated with water. Institutions in Water provision: PPP, SPV in water. Role of Community in water provision. Conflicting use of water: Agriculture vs. Water harvesting; Water for Irrigation: Source, Access, Trans-boundary conflicts and co-operation, pricing, demand and supply conditions. Regulatory and Facilitative policies, Investments in Irrigation: Minor, Major irrigation and issues related to these. Technology in irrigation (systems); equity, efficiency and pricing issues in irrigation; Drinking / Potable Water: Source, provision at various levels (Village, City and District) equity, efficiency, leakages and unaccounted water and its minimization. Privatization of Water and its implications. Pricing and access. Spatial variations in standards and provisions.	12
Unit - 3	**Sanitation and Solid Waste Management** Policies and Programmes in the provision of Sanitation at various levels: Rajiv	12

	Gandhi Technology Mission on Water supply and Sanitation (Rural), City Sanitation Plan, and State Sanitation Strategies; Sanitation and MDG, Resource Commitment for Sanitation. Access to Sanitation: Cost and Coverage, role of institutions: Public, Private, PPP, community involvement; Sanitation and environment, Sanitation and health; Wastes in Rural Areas: types of waste, Problems and reuse; community involvement in collection, treatment and reuse. Wastes in Urban areas: collection and disposal, technological innovations, formal and informal institutions in waste collection. Role of ULBs, NGOs, informal networks, rag-pickers, Solid waste as an economy issue, cost recovery in solid waste.	
Unit - 4	**Regional Roads and Energy** Hierarchy of Roads: National, State, District, Other District Roads, and Village Roads: standards, provision and institutions involved. Investment, pricing and maintenance; Access, Coverage and conditions; National, State and District Policies towards Roads; National Highway Project: Golden Quadrilateral, North-South and East-West Corridors and its impact on regional space, PMGSY and its impact on village connectivity. BRDO: border roads and backward regions; Forward and Backward regions in terms of road provision; Conventional and Alternative Energy Sources and Policies and programmes towards energy at various levels. Demand and Supply projections, investment and pricing; Trans-boundary issues in production, sharing; privatization issues. Nuclear Energy: issues involved and probable spatial impact.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Tan Yigitcanlar	Sustainable Urban and Regional Infrastructure Development: Technologies, Applications and Management	2010	IGI Global Publishing Company
2.	Sharad K.Jain, Pushpendra Aggarwal & Vijay Singh	Hydrology and Water Resources of India	2007	Springer
3	National Institute of Urban Affairs	Status of Water Supply, Sanitation and Solid Waste Management in Urban Areas	2005	National Institute of Urban Affairs
4	George Tchobanoglous & Frank Kreith	Handbook of Solid Waste Management	2002	Mc Graw Hill
5	Da Zhu,P.U.Asnani, Christian, Zurbrugg	Improving Municipal Solid Waste Management in India	2007	World Bank
6.	B.C. Vaidya	Geography of Transport Development in India	2003	Concept Publishing Company
7.	Working Group on Road Transport for 12th Plan (2012-	Report of Working Group on Road Transport	2012	Planning Commission

	2017)			
8.	Gevorg Sargsyan Mikul Bhatia Sudeshna Ghosh Banerjee Krishnan Raghunathan Ruchi Soni	Unleashing the Potential of Renewable Energy in India	2010	World Bank
9.	Christopher Flavin and Molly Hull Aeck	Energy For Development, The Potential Role of Renewable Energy in Meeting the Millennium Development Goals	2007	World Watch Institute
10	CPHEEO	CPHEEO manuals on Water Supply, Sewarage, Drainage and Solid Waste Management	2005-08	CPHEEO
List of Exercises / Practicals:				
1.	Visits to offices like NHAI, Power Grid Corporation, Metro Rail Corporation, Metropolitan Regional Development Authorities and submit report.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2.	Assignment on Unit 3 or Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Regional Planning**		
Name of the Subject: **DISTRICT PLANNING AND RURAL DEVELOPMENT**		
Subject Code: **RP.C.2.3**	Semester: **Second (Regional Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study District Planning with Integration of Rural and Urban Development Initiatives, Policies and Programmes.**

Objective:

1. **To equip students with the Tools and Techniques of Participative and Integrated District Planning.**
2. **To expose students to the Rural Development and Management Issues, Initiatives and Strategies.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Introduction** Decentralized Planning in India – Historical perspective: Current Scenario – Recent Development in decentralized district level planning. 73rd and 74th Constitution Amendment Acts, Participative District Planning; Role of Planning Commission and Finance Commissions, and ICT in District Planning.	9
Unit - 2	**District Planning** Data Management and District Level Visioning, Institutional and other support for District Planning Committee, Bridging gap through district planning, resource mapping and determination of funding sources, consolidation of urban and rural plans; Multi-Sector and multi-level integrated approach to planning (vertical and horizontal spatial integration); Rural-Urban spatial relationship; District Development Plans – Guidelines for District Planning: Content and context and methodologies, Village Development Plans – an Integrated approach, rural norms and standards (spatial). Capacity Building for Decentralized Planning; Democratizing Information: using media for district development.	12
Unit - 3	**Rural Development - I** Introduction: Meaning and Scope and overview of rural development: Historical perspective – Rural Development Programmes in India. Problem / perception and identification; Rural Area Planning – Programmes / Policies / Schemes for rural development, their coverage and outcomes; Rural Infrastructure Development: Bharat Nirman – A business plan for rural infrastructure, Rural Building Centers, PMGSY, IAY, Rajiv Gandhi Technology Mission, Central Rural Sanitation Programme, PURA. Rural Employment Schemes: Mahatma Gandhi National Rural Employment Guarantee Act, 2005, Sampoorna Grameen Yojana, National Food for work programme, Swarna Jayanty Gram Swarozgar yojana, National Social Assistance Programme. Programmes: Command Area Programme, Drought Prone Area Programme, Backward Area Development Programme, North Eastern Development Programme. Technology Missions: Water, Sanitation, etc.	15

Unit - 4	**Rural Development - II** Changing Profile of the Rural areas of India: Consumption pattern changes, land utilization changes, cropping pattern changes, holding size change, living standard changes, changes in asset ownership – its implication in the planning process; Rural Settlement Analysis: Types, activity, environment and economic interface in rural habitat, technology in rural settlement; Land Utilization: Types of land utilization and its relevance to planning; Land conversions and its regulation / facilitation in peri-urban areas; Land utilization analysis; Common property and its use, tenancy and ownership, holding size and its relevance, irrigated and non-irrigated and land values; Sources of information for land information; Technology in Rural Development: ICT in rural development, Rural Information system, Weather forecasting, disaster minimization, market information, etc. E-Panchayats, energy efficient technologies and alternative technologies; Inclusive Development: Special Component Plan - Tribal Sub Plan and Weaker Sector Plan allocation, implementation, monitoring and evaluation; North Eastern Plan.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1	Mathew, George	Panchayati Raj, from Legislation to Movement	2002	Concept Publishing Co., New Delhi
2	GoI	Constitution (73rd Amendment) Act 1992		GoI, New Delhi
3	GoI	Constitution (74th Amendment) Act 1992		GoI, New Delhi
4	Planning Commission	Manual of Integrated District Planning	2006	Planning Commission, New Delhi
5	GOI	Various Five Year Plans (1st to 12th)		Planning Commission, New Delhi
6	Govt. of Kerala	Kollam Perspective Plan	2009	Department of Town & Country planning, Thiruvanantpuram
7	Maheshwari, S.	Rural Development in India: A Public Policy Approach	1985	Sage, New Delhi
8	Cokke, B. and Kothari, U (Eds.)	People's Knowledge, Participation and Patronage	2001	ZED Books, London

List of Exercises / Practicals:

1	To visit Nagar Panchayat or Gram Panchayat and submit report on their functioning.

List of Assignments/Tests:

1	Test on Unit 1 or Unit 2.
2	Assignment on Unit 3 or Unit 4.

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Regional Planning**		
Name of the Subject: **LAND MARKETS AND MANAGEMENT**		
Subject Code: **RP.C.2.4**	Semester: **Second (Regional Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	
Aim: **To study Land Markets and Land Management Techniques.**		
Objective:		
1.	**To study Formal and Informal, Legal and Illegal Market Conditions.**	
2.	**To study Land Pricing Methods and Real Estate Markets.**	
Pre-Requisites: --		

Contents		Hrs
Unit - 1	**Land Economics, Land Policy and Land Markets** Economic Principles of Land use, Concept of Rent and its application. Demand forecasting for land, factors affecting land supply and demand; Market Conditions – formal and informal, legal and illegal; Instruments of land policy and impact on markets: Planning instruments, market development instruments, financial development instruments, fiscal instruments, and other supportive instruments: Market by Government and Government by Markets: Regulation, monopoly power and its use, private development, rent-seeking and its impact on land supply, access to land by various segments of population, and PPP in land.	12
Unit - 2	**Supply Side Management** Property Rights: ownership, user and exchange rights: Its implication on land supply, Land Development: Type, cost, methods of disposal. Corruption and land markets: Corruption, black money and land markets; Relation between land, share and gold markets. Regulation in Land Markets: Social justice and land distribution: public domain, social-democratic regulation and corporatist regulation, collective action of the state and regulation of its supply of land – overall impact of regulation on land prices: Master Plan, Zoning and other planning regulations and their impact on supply. Land Management Techniques: Private land assembly, co-operatives in land development, FDI in land development, land pooling and plot reconstitution, Transfer of development rights, land sharing and land lease.	12
Unit - 3	**Demand Side Management** Income elasticity of land, business cycles and its impact on demand for land, externalities and internalities in land development and induced demand, economic growth and demand for land; Changes in tastes and preferences and its effect on type of land; Poor and their demand; Physical, fiscal, financial and legal incentives for inducing or restricting the demand for land; Mega investments and its effect on land.	12

Unit - 4	**Land Pricing** and **Real Estate Markets** Land valuation techniques, land pricing, subsidies, auctions; type of development: plotted, flatted system, and their effect on land pricing. Hedonistic pricing, land price behavior in urban centers; constructing the land price index; Market Conditions – real estate cycles, market efficiency, market forecasting, Cartels, collusion, and rent seekers in real estate market, agents in real estate markets, risks; Real estate regulatory bill and its likely impact. Land Information System (LIS): Land records in rural areas (examples from Karnataka, Andhra, etc), transparency in land transaction, methods of publicizing land prices and land price monitoring.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Harvey, Jack and Jowsey Erine	Urban Land Economics	2004, 6th Edition	Macmillan Publications, London
2.	World Bank	Sustainable Land Management Sourcebook.	2008	World Bank Publications, Washington

List of Exercises / Practicals:

1	Visit to Land Valuation Section of Local Body / Development Authority and submit report.

List of Assignments/Tests:

1	Test on Unit 1 or Unit 2.
2	Assignment on Unit 4.

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Regional Planning**		
Name of the Subject: **POVERTY AND DEVELOPMENT**		
Subject Code: **RP.C.2.5**	Semester: **Second (Regional Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study aspects of Poverty including Measures, Indicators, etc.; with relation to Urban and Regional Planning.**

Objective:

1. **To study the Definitions, Measures and Indicators of Poverty with reference to Urban and Rural Planning.**
2. **To understand the relationship between Marginal Spaces and Poverty in Urban and Rural Areas.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Understanding Poverty** Definition, concept of poverty, new definitions of poverty and its likely impact: relative poverty, absolute poverty, over all poverty, extreme poverty, physical poverty, income poverty, rural and urban poverty; poverty data base in India, data sources used for estimating poverty in India (household surveys and household consumption surveys); Globalization of poverty.	9
Unit - 2	**Measures of Poverty** Evolution of poverty line, consumption expenditure data: per capita consumer expenditure, distribution of expenditure; source of Data: National Sample Survey (NSS), National Accounts Statistics, identification of poor; how identification is done in India, food and land as a substitute, slum centric views and other methods. Approaches: livelihood approach, consumption based approaches, etc.	12
Unit - 3	**Indicators of Poverty** Methodology: Poverty Lines, Rural and urban poverty lines, national poverty lines, poverty ratio, sub-national indicators: MDG indicators, income and non-income indicators (Education and health, etc); Quality of life indicators, empowerment indicators, gender indicators, and human development indicators.	12
Unit - 4	**Rural and Urban Poverty** Over view: incidence and dynamics of rural poverty: causes of rural poverty: dimensions of rural poverty, estimates of rural poverty in India, issues related to rural poverty; reviews of development strategies of past decade, ways to overcome the risk and reducing their vulnerability to climate change – double effect of poverty and vulnerability to risks; Spatial targeting of poverty; Government programmes; Multi-dimensional aspects of poverty, urban poverty matrix, vulnerability and asset ownership, Informal sector and poverty, role of National Commission for enterprises in the organized sector (NCEUS), Programmes to address the poverty issues: policy based (tenure regularization), sector based (slum up gradation, access to housing), finance based (Micro finance, compulsory	15

	municipal fund allocation); Monitoring and Evaluation of anti-poverty programmes. Best Practices in poverty alleviation across the global.	

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1	Chambers, R.	Poverty in India: concepts, research and reality,	1988	Institute of Development Studies, London.
2	Amis, P. and Rakodi, C.	Urban poverty: Issues for research and policy, Journal of International Development, Vol.6, Issue 5, pp.627–634.	1994	
3	Datta, A.	The Illegal City: Space, Law and Gender in a Delhi Squatter Settlement	2012	Ashgate, Burlington.
4	Roy, A. and Ong, A. (Eds.)	(Worlding Cities: Asian Experiments and the Art of Being Global,	2011	Wiley Blackwell, London.
5	Harriss, J.	Antinomies of Empowerment: Observations on Civil Society, Politics and Urban Governance in India, Economic and Political Weekly, Vol.42, No.26, pp.2716-2724.	2007	

List of Exercises / Practicals:

1	Visit to a rural area and a squatter settlement and submit report.

List of Assignments/Tests:

1	Test on Unit 1 or Unit 2.
2	Assignment on Unit 3 or Unit 4.

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Regional Planning**		
Name of the Subject: **REGIONAL PLANNING STUDIO - I**		
Subject Code: **RP.C.2.6**	Semester: **Second (Regional Planning)**	
Duration: **240 Hours**	Maximum Marks: **500**	Credits: (0 + 10) = **10**
Teaching Scheme	**Examination Scheme**	
Lecture : **3 hrs/week**	End Semester Exam: **Marks 200**	
Practical : **12 hrs / week**	Internal Assessment: **Marks 300**	

Aim: **To carry out Village and Block Level Planning.**

Objective:

1. **To study the Physical, Socio-demographic, Organizational / Administrative and Economic Characteristics of the Rural Spatial Units.**
2. **To find out the Gaps in Provision of and Access to Physical and Social Amenities and to come out with Strategies for Effective Targeting of the Gaps through a Holistic Planning Process.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Application of GIS and SDI in Planning** In this module, the students will be trained in the aspects of GIS and SDI that includes digitization, 3D modeling, overlays, interface with statistical packages into GIS and how to use them. This will be applied to the studio project and the students will be required to do all their analyses at various levels based on the data collected from the field.	75
Unit - 2	**Block or Taluka Planning** or Taluka Planning has been practiced in India since Independence. After the 73rd and 74th CAA, the emphasis has been placed on district planning which in turn has given scope to do Block or Taluka planning so as to achieve inclusive development. Not many village level officials know about the process of block level plan making except in some states. The students are required to prepare a detailed Block or Taluka Plan for a selected block(s) in a district and come out with a detailed analysis, proposals for development and written report.	165

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Cooper, H.	Synthesizing Research: A Guide for Literature Review	1998	
2.	Dellinger, A.	Validity and the Review of Literature, Research in the Schools	2005	
3.	Hart, C.	Doing a Literature Review, Releasing the Social Science Research Imagination	1998	London, Sage and Open University
4.	Dupta, K.K. and Tyagi, V.C.	Working with Maps	1992	105, printing group, Survey of India, Department of

				Science and Technology, Government of India.
5.	Jain, Manishika	GIS & Remote Sensing Techniques	2009	Himanshu Publications, New Delhi
6.	Planning Commission	Manual of Integrated District Planning	2006	Planning Commission, New Delhi
List of Exercises / Practicals:				
1	Visit to Block / Taluka Level / Local Bodies and submit report.			
List of Assignments/Tests:				
1	Marked Review of Unit 1 and Unit 2.			
2	External and Internal Jury.			

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Regional Planning**		
Name of the Subject: **ENVIRONMENT AND DEVELOPMENT**		
Subject Code: **RP.C.3.1**	Semester: **Third (Regional Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study Interface between Environment and Development.**

Objective:

1. **To study Environmental Risks, Impact and Role of Institutions of Environment Management.**
2. **To study the Aspects of Preparedness, Prevention and Mitigation.**

Pre-Requisites: --

Contents		Hrs
Unit – 1	**Environment and Development** Environment and Development interface: Resource Use, exploitation and conservation: Land, water, air and green spaces including forest cover. Impact of various human activities on environment including recreation, tourism, urban waste, and impact on environment.	9
Unit – 2	**Emerging Concepts** Emerging Concepts: smart growth, clustered cities, ecological foot prints, green development, sustainable cities and inclusive cities for sustainable livelihood; Environment and poverty links; Environment and Economy interaction: Kuznet curve, Green GDP, Carbon Trading, carbon sequencing, environmental accounting, and Green Budgeting.	12
Unit – 3	**Environmental Risks, Impact and Role of Institutions in Environment Management** Environmental Risks in rural and urban areas, health and environmental links, sustainable growth, carrying capacity, optimum city, Environmental Impact Assessment: project specific, universal; Acts and Regulations; Role of various levels of governments in environmental management; NGOs and other agencies in environmental management; Case studies from developing and developed countries. Political commitment and environmental policy; Local Agenda 21, MDGs, environmental standards.	12
Unit - 4	**Disaster Preparedness, Prevention and Mitigation** Concepts, processes and perceptions of Disasters – natural and manmade – causes and consequences. Disaster and natural environment: flooding and drainage, landslides, soil erosion, earth quakes, tremor, tsunami, cloud bursts, etc. Damage to people and property due to disaster; Case studies from across the world; Disaster Recovery. Disaster Mitigation Planning and resource management: Disaster preparedness, prevention, displacement and development. Government structure and disaster mitigation, disaster mitigation measures at individual, group and community level. Human response to disaster – short term and long term effects. Integrating disaster mitigation in spatial planning process: micro zoning, building bye-laws, norms and standards, density variations, provisions of infrastructure for	15

	disaster mitigation. Disaster insurance at various levels: village, district, and town / city level; Community awareness and participation at various levels; Role of NGOs / CBOs and communities in disaster education. Relevance of disaster management with relevant to development and environment; Use of technology and media for spreading disaster awareness.	

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Stephen Dovers	Environment and Sustainability Policy	2005	The Federation Press
2.	P.S. Brandom, P.L. Lombardi and V. Bentivejna (ed.)	Evaluation of the Built Environment for Sustainability	2005	E & FN Spon, London.
3.	Paul Pritchard (ed.)	Environmental Risk Management	2001	Earthsan Publication Ltd.
4.	World Commission on Environment and Development	Our Common Future	Latest Edition	Oxford University Press
5.	Peter Roberts, Joe Ravetez and Clive George	Environment and the City	2009	Routledge, Taylor and Frances Group
6.	UNDP	One Planet to Share Sustaining Human Progress in a Changing Climate Asia – Pacific Development Report	2012	UNDP
7.	Rob Roggemo	Adaptation to Climate Change: A Spatial Challenge	2009	Springer
8.	Maleolm Dowden	Climate Change and Sustainable Development	2008	EG Books, London

List of Exercises / Practicals:

1	Visit to National / State Institute of Disaster Management and submit report.

List of Assignments/Tests:

1	Test on Unit 1 or Unit 2.
2	Assignment on Unit 4.

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Regional Planning**			
Name of the Subject: **PROJECT PLANNING**			
Subject Code: **RP.C.3.2**	Semester: **Third (Regional Planning)**		
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3	
Teaching Scheme	**Examination Scheme**		
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**		
Practical : **--**	Internal Assessment: **Marks 50**		
Aim: **To study Appraisal and Evaluation of Projects.**			
Objective:			
1.	**To study Technical, Financial and Economic Appraisal and Evaluation of Projects.**		
2.	**To study Social, Commercial, Environmental and Institutional Appraisal and Evaluation of Projects.**		
Pre-Requisites: --			

Contents		Hrs
Unit – 1	**Introduction to Project Planning and Policy Parameters** Introduction to Project, nature of planning projects – Project Life Cycle: Identification, issues involved in identification including source of projects, Formulation: links between projects and local, district, state and national level planning including sectoral policies; pre-feasibility studies; feasibility studies; Concept of Appraisal: Definition, need and aspects; Appraisal Methods: UNIDO, Little-Mirrlees, ZOPP, GOPP, etc.; Finance, cost recovery, standards, operational maintenance, institutional arrangement, design viability, density and cost, public participation, etc., and how these affect a project. Planning projects: Scale, cost, space and time variations; Demand Analysis and forecasting; market analysis; with and without project scenario analysis.	12
Unit – 2	**Technical, Financial and Economic Appraisal** Magnitude of the project, processes, materials, equipment, reliability of the system to be used, suitability of the plan, layout and design, location of the project, necessary infrastructure, factors of production, methods of implementation, procurement, phasing and implementation schedule; Project profitability at market price; techniques of financial appraisal (methods not based on time value of money and use of time value of money in appraisal); financial effects on the intended beneficiaries, financial risk and sensitivity to price changes, adequacy, autonomy and financial standards and overall financial viability of project through Internal Rate of Return (IRR) and sensitivity analysis; Efficiency pricing: a) Market distortions- shadow pricing: labor, foreign exchange, land and capital; b) Income distribution effect; c) consumption, savings and investment adjustments, d)adjustments for poverty, e)adjustment for merit and demerit goods; calculation of Economic Rate of Return (ERR)	12
Unit - 3	**Risk and Uncertainty** Types of Risk: Systematic and unsystematic, integrating risks in project NPV criterion. Methods: Conservative estimates, project classification, shorter payback period, certainty equivalent approach, Risk adjusted return, Capital Asset Pricing	9

	Model (CAPM), Monte Carlo Simulation, Decision Tree Analysis, Cost and Time over runs in project.	
Unit – 4	**Social, Commercial, Environmental and Institutional Appraisal and Evaluation** Socio-cultural context of a project, five entry points to social analysis of a project and how to do that, Use of social assessment methods: PRA, SARAR, etc, Social-Cost-Benefit Analysis and Returns (SRR); Country Specific and Project Specific Procurement: compulsory contract tendering, e- tendering and transparency; Marketing of the project Output; Resource Pricing: Methods of identifying environmental costs and benefits of a project- travel cost, replacement cost, bequest pricing, hedonic pricing, contingent valuation, land values, preventive / mitigation expenses, benefit transfers, productivity changes. Preparation of EIA/EIS in terms of costs and benefits; Institutional Commitment towards a project, Capacity Enhancement Need Assessment (CENA); Five aspects of institutional appraisal: prior experience in the sector, interface between participating institutions, power, responsibility and cost and benefit sharing, institutional covenants, and relevant regional, state and local level actors / agents in a project. Policy level issues: National, Sectoral, State, and local: Fiscal, legal and other policies that affect the projects; Technology usage in a project and its impact; Monitoring a project: Techniques and software's for project monitoring; Evaluation: Types of evaluation and its effectiveness. Problem Solving: Cost effective, cost-benefit analysis, discounted cash-flow techniques, calculation of IRR and ERR.	15

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1	Forbes Davidson	Urban Projects Manual: A Guide to Preparing Upgrading and New Development accessible to Low Income Groups	Second	Liverpool University Press DFID
2	Joanna AutorLedgerwood	Microfinance Handbook: An Institutional and Financial Perspective	1999	The World Bank, Washington DC
3	Haim Levy	The Capital Asset Pricing Model in the 21st Century: Analytical, Empirical and Behavioural Perspectives	2012	Cambridge University Press, New York, USA
4	Joseph Martial Ribeiro	International Development Projects: Appraisal, Execution Planning and Monitoring	2011	Presses Internationals Polytechnique

List of Exercises / Practicals:

1	Visit to Project Planning Section / Division of Local Body / Development Authority and submit report.

List of Assignments/Tests:

1	Test on Unit 1 or Unit 3.
2	Assignment on Unit 2 or Unit 4.

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Regional Planning**			
Name of the Subject: **INSTITUTIONAL ANALYSIS AND GOVERNANCE**			
Subject Code: **RP.C.3.3**	Semester: **Third (Regional Planning)**		
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3	
Teaching Scheme	**Examination Scheme**		
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**		
Practical : **--**	Internal Assessment: **Marks 50**		
Aim: **To study the Role, Relevance and Functions of Institutions and Organizations with relevance of their Interface, Conflicts and Effectiveness.**			
Objective:			
1.	**To study the Role of Planning Organizations in the Planning Processes.**		
2.	**To study the Type, Form, Nature and Quality of Decentralized Government in India and its relationship with Urban and Regional Planning.**		
Pre-Requisites: --			

Contents		Hrs
Unit – 1	**Institutions in Planning** Type of institutions, their role and relevance (legal, political, social, cultural and economic institutions), formal and informal institutions and spaces – their interface, conflicts, reach, and their effectiveness in planning: Analyzing the institutions: Methods, process and evaluation. Role of the State in Planning: Market facilitative, regulatory and monopoly power.	12
Unit – 2	**Institutions and Organizations** Formal and informal institutions such as constitutions, electoral rules, property rights, and civil rights. How and why people in different groups, countries, and cultural context of institutions to facilitate collective action. Whether different groups construct distinctly different institutions to deal with similar problems and why similar institutions seem to work differently in differently in distinct societies; Different between organizations and institutions, government and governance; Organizations: types, concepts, theories, structure and functions: approaches to understanding organizations. Institutional building: factors and processes, institution Process and networks – how the network operates; Present organizations dealing with urban and regional planning. Post 73rd and 74th Constitution Amendment Act environment and the modified role and functions of local bodies, local authorities, district authorities and state level agencies; Case studies.	12
Unit – 3	**Decentralization of Powers** Development Planning and Indian state-centralization, powerlessness, decentralization; the institutional frame and mechanism for urban governance as envisaged in 73rd and 74th Constitution Amendment Act. Transfer of Power from Centre to State and State to Local government, role of the existing planning and development agencies in various states in the light of Constitution Amendment Act; role of various institutions in the governance process and access to government by various stakeholders.	12

Unit – 4	**Network Governance** Role of the state in relation to other Stakeholders (NGOs, Private Sector, Scientific Network and international institutions), New State Spaces: Invited and contested spaces: changing role of the state- emergence of middle class and its socio-political space, collective bargaining and collective action; role of donor agencies; Advanced Locality Management, Resident Welfare Associations and other agencies in the governance system. Role of People's participation in planning process: Process of inclusion and exclusion in governance. E- Governance and Grievances Redresses system.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1	Baud, I.S.A. and Wit, J. de	New Forms of Urban Governance in India: shifts, models, networks and contestations,	2008	Sage New Delhi.
2	Jayal, N.G., Prakash, A. and Sharma, P.K.	Local Governance in India: decentralization and beyond,	2006	Oxford University Press, New Delhi.
3	Roy, A. and Ong, A. (Eds.)	Worlding Cities: Asian Experiments and the Art of Being Global	2011	Wiley Blackwell, London.
4	Harriss, J.	Antinomies of Empowerment: Observations on Civil Society, Politics and Urban Governance in India, Economic and Political Weekly, Vol.42, No.26, pp.2716-2724.	2007	

List of Exercises / Practicals:

1	Visit to a municipal agency to observe how decisions are made in respect to planning related matters and submit report for evaluation.

List of Assignments/Tests:

1	Test on Unit 1 or Unit 2.
2	Assignment on Unit 3 or Unit 4.

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Regional Planning**		
Name of the Subject: **POLITICS AND PUBLIC POLICY**		
Subject Code: **RP.C.3.4**	Semester: **Third (Regional Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	
Aim: **To study Public Policies pertaining to City and Region.**		
Objective:		
1.	**To study how Public Policies are framed, who frames these Policies and their Context.**	
2.	**To study Tools and Methods required for Conducting Research on Policies pertaining to Urban and Regional Issues.**	
Pre-Requisites: --		

Contents		Hrs
Unit – 1	**State as a manager of resources and Politics of Provision** Political culture of Indian State: Center, State and Local political economy, emergence of state in the federal set up; politics of the state and bureaucracy; politics and emergence of civil society; regeneration and redevelopment politics; Property rights, norms and standards, government market and market by government; regulatory state, reforming state, rent-seeking state and their spatial implications; Land use Politics, politics of provision of housing in urban and rural areas, infrastructure; Decision Making, Decision-Taking process. Financing and Pricing; Case studies from India and abroad on planning and political decisions in their impact on rural and urban development. Examples from: South Korea: conversion of rural land to urban land, FSI changes and resultant changes in land use and form: China, USA and other countries.	12
Unit – 2	**Nature and Making of Public Policy** The Nature of public problems, planning as a public issue – policy analysis and process: Six Steps in Policy Analysis: how are policies made, who influences the policy agenda and what issues affect policy's 'success' and 'failure'?, what can we learn from how different countries approach similar policy problems? Theoretical frameworks, the role of institutions in the policy process, and the motivation of policy actors. Classical Rational Problem Solving Model. Limitations in Public Sector and the Private Sector, Establishing Analysis.	12
Unit - 3	**Public Policy Analysis and Strategic Policy Planning** Overview of Policy Process Models, Policy Initiation: Multi-Stream Approaches, policy implementation analysis, life-course approach to policy analysis, Case studies in Policy Process Analysis, Policy Integration: possible areas of integration in Planning; Differences between strategic planning and management in the public and private sectors, Mission statements and goal-setting techniques. Strategic decisions and evaluation, strategic leadership. Co-ordination and networks. Crisis Management. Transformational strategic Management.	12
Unit – 4	**Public Policy Management and Delivery**	12

	How are new information and communication technologies shaping public service delivery?: E-Governance, E-Panchayats, E-Market, etc. Transparency, Accountability, Accessibility, and participatory mechanisms; Trends and Pressures that affect public service organizations, Market based arrangements, Multi-service provider arrangements in public sector setting, and benchmarks in policy management; Land, Environment, Health, Water and other policies – Integration and disintegration of policies – Frequency and commitments to change; Global Commitments: MDG, Environment, etc, and its commitment at the National, State and Local Level. Land Policy: Interest Groups, Acts / agents and policy making process.	

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1	Fischer, F. and Forester, J.	The argumentative Turn in Policy Analysis and Planning	1993	Duke University Press and UCL Press, London
2.	Judge, D., Stoker, G. and Wolman, H.	Theories of Urban Politics	1995	Sage, London
3.	Durand – Lasserve, A. and Royston, L.	Holding Their Ground: Secure Land Tenure for the Urban Poor in Developing	2002	Earthscan, London
4.	Parsons, W.	Public Policy	1995	Edward Elgar, Cheltenham
5.	Schon, D.A. and Rein, M.	Frame Reflection: Toward the Resolution of Intractable Policy Controversies	1994	Basic Books, New York
6.	Birkland, T.A	An Introduction to the Policy Process: Theories, Concepts and Models of Public Policy Making	2011	M.E. Sharpe, London, Third Edition

List of Exercises / Practicals:

1	To visit Local Body / Development Authority to study the Process of Policy Framing and Management and submit report.

List of Assignments/Tests:

1	Test on Unit 1 or Unit 2.
2	Assignment on Unit 3 or Unit 4.

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Regional Planning**		
Name of the Subject: **RESETTLEMENT AND REHABILITATION**		
Subject Code: **RP.C.3.5**	Semester: **Third (Regional Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study an emerging Issues related to Resettlement and Rehabilitation.**

Objective:

1. **To study the Basic premises for Resettlement and Rehabilitation.**
2. **To study various Dimensions of Resettlement and Rehabilitation along with Participatory Process.**

Pre-Requisites: --

Contents		Hrs
Unit – 1	**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.	15
Unit – 2	**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.	15
Unit – 3	**Rehabilitation** Rehabilitation: Policies, Assessing the livelihood looses, livelihood impact assessment and skill mapping surveys, income restoration strategies, training strategy for skill upgradation and meeting demands for shifting economic profiles in the development area.	9
Unit - 4	**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	9

	and R interventions.	

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Cernia, Michael M.	Involuntary Resettlement in Development Projects: Policy Guidelines in World Bank Financed Projects(World Bank Technical Paper No. 80)	1988	World Bank, Washington.
2.	Penz, Peter, Drydyk, Jay and Bose S. Pablo	Displacement by Development: Ethics, Rights and Responsibilities,	2011	Cambridge University Press New York
3.	Advani, Mohan	Urbanization, Displacement and Rehabilitation	2009	Rawat Publications, Jaipur

List of Exercises / Practicals:

1	Visit to Local Body / Development Authority dealing with Rehabilitation and Resettlement and submit report.

List of Assignments/Tests:

1	Test on Unit 1 or Unit 2.
2	Assignment on Unit 3.

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Regional Planning**			
Name of the Subject: **REGIONAL PLANNING STUDIO - II**			
Subject Code: **RP.C.3.6**	Semester: **Third (Regional Planning)**		
Duration: **240 Hours**	Maximum Marks: **500**	Credits: (0 + 10) = **10**	
Teaching Scheme	**Examination Scheme**		
Lecture : **3 hrs/week**	End Semester Exam: **Marks 200**		
Practical : **12 hrs / week**	Internal Assessment: **Marks 300**		
Aim: **To understand the Concept of Region in terms of National Development.**			
Objective:			
1.	**To impart knowledge for Sustainable Development of a Region considering the variables that directly or indirectly affects Regional Development.**		
2.	**To make the students understand the ways of planning for a Region (District / Mega / Metro) and to take up a case study and prepare a Regional Plan.**		
Pre-Requisites: --			

Contents		Hrs
Unit - 1	**SPATIAL DATA INFRASTRUCTURE** **Concepts and Hierarchy** Spatial Data Infrastructure: Concepts, Contents, Nature and SDI hierarchy; Global, National, Regional and Local SDI initiatives. Building a SDI and using it in planning and decision making process. Open Geospatial Consortium – ISO standards (TC211). Data streaming and mining in spatial data infrastructure. **From Global to Local SDI applications** National SDI Initiatives: NRDMS: Multi-level spatial data infrastructure, NSDI: Assimilation and Dissemination and Data warehouse; State SDI: NCT Delhi SDI, Karnataka and Kerala Portals; Case studies from various levels. Karnataka's Land Management Programme: Bhoomi, geo portal assisting local to state level planning process; Gujarat's Tax programme, etc.; Application to coastal area planning – Tamil Nadu coast. **SDI application in Planning and Decision Support** SDI – Location based technology development, Interoperability arrangement for geospatial data and ontology mapping; Application in Population Data Sets, Natural Resource Repository, Integrated Water Resource Management, mKrishi – application in agriculture and rural development, geospatial application in transportation, disaster management and conservation. Spatio-temporal data modeling and analysis; 3 - D mapping of land and its use in city and regional planning; Geo visualization of landscapes: rural and urban. **Technology in SDI and decision support system** Real time technologies and their application: landslides monitoring in Himalayan region, web based spatio-temporal prediction of landslides, decentralization planning in Uttarakhand- web based model. Satellite based and other real time technologies and their use in identifying physical transformation. Its application in urban and rural areas: slum formation, illegal colonies, flash flood warning system in river and coastal belt, etc.	100

Unit - 2	**DISTRICT PLANNING / REGIONAL PLANNING** The objective of this studio is to expose the students in the practical ways of planning for a region (district / mega / metro Region). The students will be given a live case study to understand the complexities of planning the region, inter-sector, scalar interface, integration, etc. The focus will be to understand the scale of the problem and how to tackle them. It is expected that the approach will be mostly in terms of governance, which the students have acquired through theory subjects in second semester. It is also expected that the students after preparing the plan will present it to the stakeholders to get their viewpoint.	140

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Neville, C.	The Complete Guide to Referencing and Avoiding Plagiarism	2007	McGraw Hill International
2.	Taylor. Gordon	A Student's Writing Guide: How to Plan and Write Successful Essays	2009	Cambridge University Press
3.	May, Tim	Social Research: Issues, Methods and Process	2001	Open University Press
4.	Bryman, Alan	Social Research Methods	2008	Oxford University Press
5.	Planning Commission	Manual of Integrated District Planning	2006	Planning Commission, New Delhi
6.	Govt. of Kerala	Kollam Perspective Plan	2009	Department of Town and Country Planning, Thiruvanantpuram

List of Exercises / Practicals:

1	Visit to Metropolitan Development Authority or to Regional Planning Authority and submit report.

List of Assignments/Tests:

1	Marked Reviews on Unit 1 and Unit 2.
2	External and Internal Jury.

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Regional Planning**		
Name of the Subject: **FINANCING DEVELOPMENT**		
Subject Code: **RP.C.4.1**	Semester: **Fourth (Regional Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : **3 hrs/week**	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To provide exposure on Mechanism of Financing the Development.**

Objective:

1. **To analyze concepts and practice of Financing the Development with a particular reference to Public Finance.**
2. **An examine Modes and Modulates of Loan Finance PPP and associated Reforms at Local Level.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Financing: Introduction** Methods of Financing: Concepts and practices, Role of public finance, commercial borrowings and market borrowings. Own Source funding, Equities, debt financing, sell out, refinancing, co-financing, and venture capital issues in Project financing.	9
Unit - 2	**Modes and Modalities of Loan Finance** Syndicate lending, lead banker, project appraisal, project evaluation, environmental considerations, planning norms and regulations, preparation of DPR, monitoring and feedback. Property Tax Reforms, Accounting Reforms and Accounting Standards, Asset Management Auditing – Social Audit, Environmental Audit, Gender Audit, Budgeting – P Budget, G Budget, E Budget, Credit Rating of Bonds. Standards and regulations.	12
Unit - 3	**Local Government Reforms and Finance** Local government taxes, levies, etc. Methods of financing projects led by local government, sources of local government finance; ways of making local government finances sustainable and buoyant.	12
Unit - 4	**PPP as a Funding Option and PPP Management** Conditionality for PPP, Contract Architecture, PPP Design and execution, Responsibility, cost and benefit sharing, types of PPP. PPP Case studies from various sectors: Best and worst practices. Legal issues in PPP. PPP and inclusive development.	15

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1	Munavvar, Alam	Municipal Infrastructure Financing – Innovative Practices from Developing countries	2010	Commonwealth Secretariat, London.
2.	High Power Expert	Report on Indian Urban Infrastructure and Services	2011	Government of India – NIUA

	Committee, Government of India			
3.	Ministry of Finance	Report of 13th Finance Commission	2011	Government of India
4.	Sivramkrishnan, K.C.	Revisioning Indian Cities	2011	Sage Publication
List of Exercises / Practicals:				
1	Visit to Finance Division or Section of Local Body / Development Authority and submit report on financing of any development project undertaken by them.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Regional Planning**		
Name of the Subject: **LEGAL ISSUES IN PLANNING**		
Subject Code: **RP.C.4.2**	Semester: **Fourth (Regional Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To impart knowledge of various Legislations related to Urban and Regional Planning and Development.**

Objective:

1. **To make students understand the provisions of Indian Constitution and provisions of various Acts, Laws, Rules and Regulations related to Urban and Regional Planning.**
2. **To understand the Scope, Nature and Procedure of Professional Practice; prepare Consultancy Proposals and quote fees and Charges for Professional Work.**

Pre-Requisites: --

Contents		Hrs
Unit – 1	**Law, Indian Constitution Evolution of Planning Legislation** Sources of law: custom, legislation and precedent; Meaning and terms of law: legislation, ordinance, bill, act, regulation, and bye-laws; Significance of law and its relationship to urban and regional planning, benefit of statutory backing, eminent domain powers and police powers; Concepts and contents related to planning, provision regarding property rights, legislative competence of Local, State and Central government to deal with various matters concerning Town and Country Planning; An over view of legal tools connected with urban and regional planning and development. Town and Country Planning Act, Improvement Trust Act, Development Authorities Act: objectives, content, procedures for provision an implementation of regional plans, master plans and town planning schemes; Concept of Arbitration, betterment levy development charges and public participation in statutory planning process, concept of structure plan, local plan and action plan under the Law.	12
Unit – 2	**Policy and Acts** National Environmental Policy Act; Environmental Protection Act; Land Acquisition Act: Concepts, procedure for compulsory acquisition of property and determination of compensation. Acts pertaining to SEZ; disaster management, and legal aspects of innovative techniques such as Transfer of Development Rights, Accommodation Reservation (AR), Air Rights, etc.	9
Unit – 3	**Habitat Laws and Significance of Land Development Control** Laws relating to Slum Clearance, environment, housing, landscape and traffic, Laws relating to conservation and restoration, historical monuments, archaeological sites and remnants of national importance; contract management and execution of projects; Objectives of legal tools, critical evaluation of zoning, sub-division regulations, building regulations and bye-laws, development code zoning, periphery control, land conversion in the peri-urban areas.	12

Unit - 4	**Professional Practice** Aims and objectives of professional institute, sister bodies, professional role and responsibility of planning consultants, professional ethics and code of conduct and scale of professional charges. International Agreements (GATT and WTO) and its impact in India. Formulation of Consultancy project proposal and outlines (EOI, RFP, etc); Formulation of Consultancy Contract Agreement and Contract Management Scale of Professional Charges, and Collaborative projects; Role of Inter-Disciplinary groups; appreciation of decision making process and the process in relation to varied consultancy assignments in planning. Management of office and personnel.	15

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	ITPI	Planning Legislation and professional Practice		ITPI, New Delhi
2.	Bijlani, H.U. & Balachandran	Law and Urban Land	1978	IIPA, New Delhi
3.	GoI	UDPFI Guidelines Vol. 2A	1996	ITPI, New Delhi
4.	GoI	Indian Contract Act 1872; Indian Contract Act 1872; The Arbitration and Conciliation Act 1996. Constitution of India; Constitution (73rd & 74th Amendment) Acts 1992; Model Rent control Legislation; Slum (Improvement and Clearance) Act 1956; Land Acquisition Act 1894 and amendments thereof; NCR Planning Board Act, Environment (Protection) Act 1986; Model Town Planning and Regional Planning Development Law; and other acts		
5.	Government of Maharashtra	Maharashtra Regional and Town Planning Act 1966		
6.	Government of various States	State Acts related Town Planning, Slum Clearance, Municipalities, Development Authorities, etc.		
7.	Kulshrestha, S. K.	Urban and Regional Planning in India: Handbook for Professional Practice	2012	Sage Publications, New Delhi
8.	ITPI	Conditions of Engagement of Professional Services and Scale of Professional Fee and Charges	2011	ITPI, New Delhi

9.	CPWD	CPWD Manual 2012	2012	CPWD, New Delhi
List of Exercises / Practicals:				
1	Visit to Legal Section or Division of Local Body / Development Authority or Senior Legal Advisor dealing with Planning Legislation and submit report.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 3 or Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Regional Planning**		
Name of the Subject: **THESIS**		
Subject Code: **RP.C.4.3**	Semester: **Fourth (Regional Planning)**	
Duration: **384 Hours**	Maximum Marks: **800**	Credits: (0 + 16) = **16**
Teaching Scheme	**Examination Scheme**	
Lecture : **-- hrs/week**	End Semester Exam: **Marks 300**	
Practical : **24 hrs / week**	Internal Assessment: **Marks 500**	

Aim: **To undertake Independent Study in the field of Regional Planning.**

Objective:

1	**To develop a basic understanding of the area chosen for study (by carrying out a detailed literature review).**
2	**To undertake detailed exploration of the topic (by way of surveys and studies).**
3	**To identify issues and concerns those emerge out of the study and suggest recommendations.**

Pre-Requisites: --

Contents	Hrs
Students are expected to write a thesis on the topic selected by them with the constant guidance from faculty members. Students are expected to have obtained the skills in understanding the various aspects of regional planning and apply them in their thesis work.	384

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Brubaker, D.L. and Thomas, R.M.	Thesis and Dissertations: A Guide to Planning, Research and Writing.	-	-
2.	Rowena Murray	How to Write a Thesis (3rd Edition)	-	Open University Press
3.	F. Abdul Rahim	Thesis Writing	2005	New Age International (P) Limited Publishers, New Delhi.
4.	Kastens, K. Pfirman, S., Stute, M., Abbott, D. and Scholz, C.	How to Write Your Thesis	-	Colombian University
5.	Bracken, I.	Urban Planning Methods, Research and Policy Analysis	2008	RoutIdge
6.	Wang, X., Von Hofpe, R.	Research Methods in Urban and Regional Planning	2007	Springer
7.	You Tube	Tools for Academic Research in Urban Design and Planning	2011	You Tube Video.

List of Exercises / Practicals:

1.	Field visit to Collect Data on selected Topic of Research.

List of Assignments/Tests:	
1	Marked Reviews at different Stages of completion of Research work.
2	Internal and External Jury.

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Environmental Planning**		
Name of the Subject: **THEORY OF ENVIRONMENTAL PLANNING**		
Subject Code: **EP.C.2.1**	Semester: **Second (Environmental Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study Theory of Environmental Planning.**

Objective:

1. **To study Concepts of Ecology and Ecosystem and undertake Resource Analysis for various Ecosystems.**
2. **To study Environmental Issues and Development Imperatives.**

Pre-Requisites: --

Contents		Hrs
Unit – 1	**Concepts of Ecology, Ecosystem and Environmental Planning** History of Environmental Planning, Development of habitat patterns, settlement structure and form in response to environmental challenges; Concepts of Ecology and Ecosystem, Urban Ecosystem.	9
Unit – 2	**Resource Analysis and Conservation** Resource analysis for various ecosystems and development imperatives (land, geology, soil, climate, water, vegetation) characteristics, exploitation, causative factors for degradation, analytical techniques.	15
Unit – 3	**Environmental Zones** Environmental Zones (Hill, coastal, arid, characteristics, resources, settlements pattern, problems and potentials, regulating mechanisms for development.	12
Unit – 4	**Environmental Policies, Significant Conventions, Conferences** Environmental Policies and initiatives including policies, strategies, protocols, treaties and agreements.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Andrews, Goudie	The Human Impact on the Natural Environment – Past, Present and Future	2006	Wiley Publishers
2.	James K. Lein	Integrated Environmental Planning	2002	Wiley Publishers
3.	V.H. Dale, Mary R. English	Tools to Aid Environmental Decision Making	Latest Edition	Swinger
4.	William Fox, Enslin Van Rooyen (eds.)	The Quest for Sustainable Development	2004	Juta & Co. Ltd., Cape Town.
5.	J.S. Singh, S.P.	Ecology Environment and	2008	Anamaya Publishers, New

	Singh, and S.R. Gupta	Resource Conservation		Delhi.
List of Exercises / Practicals:				
1	Visit to Eco-sensitive Zone / Environmental Zone and submit report on environmental aspects dealt by them.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 3.			

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Environmental Planning**		
Name of the Subject: **ENVIRONMENTAL DESIGN**		
Subject Code: **EP.C.2.2**	Semester: **Second (Environmental Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	
Aim: **To study Evolution of Environmental Design, Theory and Practice.**		
Objective:		
1.	**To understand Approach to Environmental Design as applicable to Built Environment and Landscape Development.**	
2.	**To study Urban Climatology and Effects of Climate Change on City Planning.**	
Pre-Requisites: --		

Contents		Hrs
Unit – 1	**Evolution of Environmental Design, Theory and Practice** Design as a determinant of Environmental quality; evolution of Environmental design, theories and practice of design.	12
Unit – 2	**Approach of Environmental Design as Applicable to Built Environment** Criteria of Urban Environmental design issues-pedestrian-vehicular conflict, City Centre Environment, Housing areas, dereliction, environmental upgradation programmes; built environment aesthetics of ensemble of buildings, techniques of study of building condition, conservation aspects of built-up areas. Environmental approaches to design and planning of rural settlements, use of alternate technology in design of human settlements.	12
Unit – 3	**Approach of Environmental Design as Applicable to Landscape Development** Landscape as an environmental asset, techniques of landscape assessment at different levels, use of landscape design for environmental improvement.	12
Unit – 4	**Urban Climatology, Acoustics and Climate Change** Urban climatology, effects of thermal pollution, factors causing heat sink effects, direct radiation, climatic effects on Urban areas, control techniques Urban acoustics:- source of noise, methods of control, design techniques. Climate Change and City Planning, application of Energy code, Clean Development Mechanism.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1	Fabio Giudice, Guido La Rosa, Fabio Giudice, Guido La Rosa, AntoninoRisitano	Product Design for the Environment: A Life Cycle Approach	2006	Taylor and Francis Group
2	Amos Rapoport	Meaning of the Built Environment: A Non-Verbal Communication Approach	1990	Sage Publications, USA

3	Leonard J. Hopper	Landscape Architectural Graphic Standards	2007	John Wiley and Sons
4	Mat Santamouris	Environmental Design of Urban Buildings: An Integrated Approach	2006	Earthscan UK
List of Exercises / Practicals:				
1	Visit to Local Bodies / Development Authority and submit report on Environmental Design being practiced by them.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 3.			
2	Assignment on Unit 2.			

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Environmental Planning**		
Name of the Subject: **ENVIRONMENTAL MONITORING AND ASSESSMENT**		
Subject Code: **EP.C.2.3**	Semester: **Second (Environmental Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study Environmental Monitoring and Assessment with reference to Air, Water, Noise and Land Pollution.**

Objective:

1. **To study Sources and Causes of Pollution with reference to Air, Water, Noise and Land.**
2. **To study Minimum Standards of Water Disposal, Noise Level and Monitoring Techniques.**

Pre-Requisites: --

Contents		Hrs
Unit – 1	**Air Pollution** Air Pollution-sources, causes/pollutants and their effects, emission sources, vehicular emissions, techniques of monitoring of emissions, emission standards, and ambient air quality. Concepts of relevant meteorological parameters, and interpolation of data, wind system measurement, turbulence; mixing height, plume use, dispersion and dispersion models.	12
Unit – 2	**Water Pollution** Water Pollution – sources, water quality tests, minimum standards of disposal (for different uses), performance criteria.	12
Unit – 3	**Noise Pollution** Noise Pollution- sources, techniques of measurement, noise level standards, noise levels.	9
Unit – 4	**Land Pollution** Land Pollution -sources, soil erodibility tests, minimum standards of disposal (minimum standards for different uses), performance criteria; interpretation of analytical trends of various parameters of quality of environment as above.	15

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1	S P Mahajan T V Ramachandra	Air Pollution Control	2008	Teri Press
2	Marquita K. Hill	Understanding Environmental Pollution	Second edition, 2004	Cambridge University Press
3	CPCB	Pollution Control Law Series **(PCLS)**		Government of India, MOEF
4	S. M. Shafi	Environmental pollution	2005	Atlantic publishers and distributors

List of Exercises / Practicals:	
1	Visit to Agencies dealing with Air, Water and Noise Pollution including CPCB or CPHEO and submit report.
List of Assignments/Tests:	
1	Test on Unit 1 or Unit 2.
2	Assignment on Unit 4.

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Environmental Planning**		
Name of the Subject: **ENVIRONMENTAL IMPACT ASSESSMENT**		
Subject Code: **EP.C.2.4**	Semester: **Second (Environmental Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	
Aim: **To study Role, Definition, Scope and Methods of EIA.**		
Objective:		
1. **To study Assessment of Impacts on Resources.**		
2. **To Assess the Role of Public Participation in EIA.**		
Pre-Requisites: --		

Contents		Hrs
Unit – 1	**Role, Definition and Scope of EIA** Role of EIA in the Planning and decision making process. Definition and need, evolution and objectives, tasks and scope.	12
Unit – 2	**Methods of EIA** Methods of EIA; advantages and limitations.	12
Unit – 3	**Assessment of Impacts** Assessment of impacts on resources (Including air, water, flora and fauna); assessment of impacts on Land use. Assessment of social and health impacts.	12
Unit – 4	**Role of Public Participation in EIA** Public Participation in EIA; definition and concepts, objectives, techniques, advantages and limitation, PRA techniques.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Asian Development Bank	Environmental Impact Assessment for developing Countries in Asia Vol. I and II.	1997	ADB Publication
2.	L.W. Canter	Environmental Impact Assessment	2nd Edition 1996	McGraw Hill, New York
3.	R.R. Barthwal	Environmental Impact Assessment	1998	New Age International Publishers
4.	R. Dale	Evaluating Development Programme and Project	2nd Edition 2004	Sage Publication
5.	A.K. Srivastava	Environment Impact Assessment	2003	A.P.H. Publishing Corporation, New Delhi
6.	Modak, P. and Biswas, A.K.	Conducting Environmental Assessment in Developing	1999	United Nations University

		Countries		
7.	Robinson, H., Kanilo, P., Anumba, C.J. and Patel, M.	Governance and Knowledgement for Public Private Partnership	2010	Wile – Blackwall, Oxford.
List of Exercises / Practicals:				
1	Visit to Local Environment and Forest Department of Central or State Government and submit report, on concept of EIA.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Environmental Planning**		
Name of the Subject: **ENVIRONMENTAL MONITORING AND ASSESSMENT (LABORATORY)**		
Subject Code: **EP.C.2.5**	Semester: **Second (Environmental Planning)**	
Duration: **64 Hours**	Maximum Marks: **100**	Credits: (0 + 2) = **2**
Teaching Scheme	**Examination Scheme**	
Lecture : **-- hrs/week**	End Semester Exam: **Marks 50**	
Practical : **3 hrs / week**	Internal Assessment: **Marks 50**	

Aim: **To familiarize students with relevant Instruments / Equipments and Procedures with Air, Water, Soil and Weather Quality Parameters.**

Objective:

1. **To familiarize students with Monitoring of Air Quality and Noise Level Measurements.**
2. **To familiarize students with Soil Testing Kit and Electronic Weather Station.**

Pre-Requisites: --

Contents		Hrs
Unit – 1	**Air Quality Parameters** Familiarization with relevant instruments/equipments and procedures (High Volume Sampler, Handy Sampler, Noise Meter, Spectrophotometer etc); TSPM, RSPM, SO_2, NO_X, Stack Monitoring, Noise Level Measurements etc.	12
Unit – 2	**Water Quality Parameters** Familiarization with relevant instruments/equipments and procedures (Flame Photometer, Water Testing Kit, Digital pH meter, BOD Incubator, Dissolved Oxygen Meter) Alkalinity, Amonical Nitrogen, BOD, COD, DO, Coliform, Fluoride, Nitrate-Nitrogen, pH, SAR, etc.	12
Unit – 3	**Soil Quality Parameters** Familiarization with relevant instruments/equipments and procedures (Soil Testing Kit) pH, EC, Soil Moisture, Phosphate, Potassium, Sodium, etc.	12
Unit – 4	**Weather Parameters** Familiarization with relevant instruments/equipments and procedures (Electronic Weather Station). Temperature, Relative Humidity, Rainfall, Wind Direction and Speed, etc.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	S. V. S. Rana	Energy, Ecology And Environment	2008	I K International Publishing House Pvt. Ltd
2.	Mukesh Kumar, Rajan Kumar Gupta & G.S. Paliwal	A Laboratory Manual For Environmental Chemistry	2009	I K International Publishing House Pvt. Ltd
3.	Central Pollution Control Board	Laboratory Analytical Techniques Series (LATS)		Government of India, Ministry of Environment and Forest

4	Wagner T.P. and Robert S.	Environmental Science: Active Learning Laboratories and Applied Problem Sets	Second edition, 2009	John Wiley & Sons
List of Exercises / Practicals:				
1	Visit to Pollution Control Boards of Central and State Governments and submit report.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 3 or Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Environmental Planning**		
Name of the Subject: **ENVIRONMENTAL PLANNING STUDIO - I**		
Subject Code: **EP.C.2.6**	Semester: **Second (Environmental Planning)**	
Duration: **240 Hours**	Maximum Marks: **500**	Credits: (0 + 10) = **10**
Teaching Scheme	**Examination Scheme**	
Lecture : **3 hrs/week**	End Semester Exam: **Marks 200**	
Practical : **12 hrs / week**	Internal Assessment: **Marks 300**	

Aim: **To undertake Planning and Design Studio Exercises focusing on City based Environmental Status and Impact Assessment.**

Objective:

1. **To introduce students to Geo-Informatics, Satellite Images and Remote Sensing.**
2. **To assess the Status of case study City with reference to Environment Quality.**

Pre-Requisites: --

Contents		Hrs
Unit – 1	**Geo-Informatics Laboratory Training** The laboratory training will be conducted in accordance with the studio exercise. Introduction to Geo-informatics, introduction to Remote Sensing – Aerial and Satellite; introduction to GIS, Spatial data and Attribute data; Satellite images as input to GIS; Collection and presentation of baseline information.	100
Unit – 2	**Environmental Plan and Assessment** Planning and Design Studio exercises pertaining to • Environmental Status • Environmental Impact Assessment • Environmental Improvement/ Conservation /Safe and Healthy City	40

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Peter Geoffrey Hall	Cities of Tomorrow: An Intellectual History of Urban Planning and Design in the Twentieth Century	1996 Updated Edition	Blackwell Publishing
2.	Ian L. McHarg	Design With Nature	1995	Wiley
3.	John Randolph	Environmental Land Use Planning and Management	1st Edition 2003	Island Press
4.	De Roo, Gert; Miller, Donald,	Compact cities and sustainable urban development: Critical assessment of policies & plans from an international perspective	2000	Ashgate Publishing

List of Exercises / Practicals:

1	Visit to a case study town and submit report on EIA.

List of Assignments/Tests:	
1	External and Internal July

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Environmental Planning**		
Name of the Subject: **ENVIRONMENTAL ECONOMICS AND AUDITING**		
Subject Code: **EP.C.3.1**	Semester: **Third (Environmental Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study Economic Measures of Sustainable Development and Environmental Performance Evaluation.**

Objective:

1. **To study Monitoring Evaluation Methodologies and Measures of Sustainable Development.**
2. **To expose students to National and International Projects relating to Environmental Economics.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Monitory Evaluation Methodologies** Uses of monetary valuation – Cost Benefit Analysis, National Resource Accounting, Pricing, Non-use Value, Techniques of monetary evaluation / valuation methodologies.	12
Unit - 2	**Economic Measures of Sustainable Development** Economic approaches of measuring sustainable development; measuring wealth, modifying GNP, savings, technological Change, Social Capital, Property right, creating global markets.	12
Unit - 3	**Environmental Performance Evaluation** Environmental Certification, Performance evaluation, Environmental Auditing, Eco-labeling, ISO.	12
Unit - 4	**Case Studies** National and International projects relating to environmental economics.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Katar Singh, Anil Shishodia	Environmental Economics	2007	Sage India
2.	Gopal K Kadekodi	Environmental Economics in Practice	2004	Oxford University Press (India)
3.	Nick Hanley, Jason F Shogren and Ben White	Environmental Economics: In Theory and Practice	Second edition, 2006	Palgrave Macmillan
4.	Roger Perman,Yue Ma, Michaek Common, David Maddison , James Mcgilvray	Natural Resource and Environmental Economics	Fourth edition, 2011	ISBN13: 9780321417534 ISBN10: 0321417534

5.	R. Kerry Turner David W. Pearce, Ian Bateman	Environmental Economics: An Elementary Introduction	1993	The Johns Hopkins University Press
List of Exercises / Practicals:				
1	Visit to Local Bodies / Development Authority and submit report on actions / projects taken by them towards Sustainable Development.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning): Specialization in Environmental Planning**		
Name of the Subject: **ENVIRONMENTAL PROTECTION AND MANAGEMENT**		
Subject Code: **EP.C.3.2**	Semester: **Third (Environmental Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study Environment Protection and Management Techniques.**

Objective:

1. **To study Air and Water Pollution Mitigation and Abetment Technologies.**
2. **To expose students to case studies related to Water Harvesting, Water Treatment and Recycling Technologies.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Environnemental Protection Techniques** Air pollution mitigation and abatement; water pollution mitigation and abatement Noise attenuation; EPA Guidelines; role of Government and Non-Government Organizations in Environmental Protection; best practices in Environmental Protection and Conservation; International Co-operation for Environmental Protection.	12
Unit - 2	**Environmental Management** Resource Management: Including management of land, water bodies and water channels, forests and wildlife, minerals. Management of Urban Areas; Management of sensitive areas – hills, coasts, arid, wetlands etc. (including participatory approaches); management of Watersheds.	12
Unit - 3	**Appropriate Technologies and Applications** Techniques and case studies related to water harvesting, water treatment, recycling, waste disposal, waste minimization, and their implications. Low cost and cleaner technologies. Models of Collaboration Environmental Planning.	12
Unit - 4	**Alternate Energy Technologies** Technologies related to alternate energy- Solar, biomass, biogas, hydro, wind and their usefulness in settlements.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	UNEP	Environmental Guidelines for Settlement Planning and Management	Latest Edition	UNCHS, UNEP (Habitat), Kenya
2.	Peter P. Rodgers, Kazi F. Jalal and John A. Boyd	An Introduction to Sustainable Development	2008	Prentice Hall of India
3.	Frank B. Friedman	Practical Guide to Environmental Management	9th Edition	Environmental Law Institute, Washington.

4.		Publications of Central Pollution Control Board on Air, Water and Noise Pollution, Waste Management		www.cpcb.nic.in
5.		New and Renewable Energy Sources		www.mnre.nic.in
List of Exercises / Practicals:				
1	Visit to Public Health Engineering Department of Local Bodies / Development Authority / State Government and submit report.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Environmental Planning**		
Name of the Subject: **ENVIRONMENTAL LEGISLATION, EVALUTION AND PRACTICES**		
Subject Code: **EP.C.3.3**	Semester: **Third (Environmental Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To impart knowledge of Legislations related to Environmental Planning, Monitoring, and Impact Assessment.**

Objective:

1. **To familiarize students about various Acts related with Environment Protection.**
2. **To familiarize students about Ministry of Environment and Forest Guidelines, Notifications and Rules related with Environment Protection and Management.**

Pre-Requisites: --

Contents	Hrs
• EP Act 1986 • Air (Prevention and Control of pollution) Act • Water (Prevention and Control of pollution) Act • Mines and Mineral Act • Factories Act • Pesticides Act • Indian Forest Act • Wildlife Act • Ancient Monuments and Archaeological Sites and Remains Act • Hazardous Waste Management and Handling Rules / Biomedical Rules / Solid Waste Management Rules • Environment Tribunal Act • Climate change Protocols and Conventions • MOEF Guidelines and Notifications • Appellate Authority Act • Other related Notifications	48

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Shyam Divan, Armin Rosencranz	Environmental Law and Policy in India	Second edition, 2001	Oxford University Press (India)
2.	Jane Holder and Maria Lee	Environmental Protection, Law and Policy	Second edition, 2007	Cambridge University Press
3.	Gadgil M. and Guha R.	Ecology and Equity	1995	Oxford, New Delhi
4.	Upadhyay S. and	Book on Environmental Law-	2002	Lexis Nexis- Butterworths-

	Upadhyay V.	Forest Laws, Wildlife Laws and the Environment; Vols. I, II and III,		India, New Delhi.
5.	Choudhuri, S.K.	Environmental Legislation in India	Latest Edition	Oxford QIBH Pub. Co.
6.	Bedi, R.S. and Bedi, A.S.	Encyclopedia for Environment and Pollution Laws	Latest Edition	Orient Law House
List of Exercises / Practicals:				
1	Visit to the Office of Senior Legal Consultant dealing with Environmental Legislation and submit report.			
List of Assignments/Tests:				
1	Appraisal of a selected Act.			
2	Case study based assignment on Selected Acts.			

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Environmental Planning**			
Name of the Subject: **ADVANCED EIA TECHNIQUES**			
Subject Code: **EP.C.3.4**	Semester: **Third (Environmental Planning)**		
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3	
Teaching Scheme	**Examination Scheme**		
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**		
Practical : **--**	Internal Assessment: **Marks 50**		

Aim: **To impart knowledge of Advanced EIA Techniques.**

Objective:

1. **To study Risk / Vulnerability Assessment of Development Projects.**
2. **Expose students to case studies on Carrying Capacity, Environmental Thresholds and Ecological Footprints.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Assessment of Development Projects** Highways, industries, construction and new townships.	12
Unit - 2	**Risk Assessment / Vulnerability Assessment** International and national methodologies; Case studies.	12
Unit - 3	**Strategic EA / Sustainability Appraisal** International and national methodologies; Case studies.	12
Unit - 4	**Carrying Capacity / Environmental Thresholds / Ecological Footprint** International and national methodologies; Case studies.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Prasad Modak, Azit K. Biswas	Conducting Environmental Impact Assessment in Developing Countries	Latest Edition	United Nations University Press
2.	Ed. R.E. Hister, Lester Roy, M. Harrison	Risk Assessment and Risk Management	Latest Edition	RSC Publishing, UK
3.	John Birkmann	Measuring Vulnerability to Natural Hazards	2006	TERI Press, New Delhi United Nations Univ.
4.	Simon Marsden	Strategic Environmental Assessment in International and European Law	2008	Earthsean, UK
5.	Dr. Mathis Wackernagel, William E. Ros	On Ecological Footprint Reducing Human Impact on Earth	Latest Edition	New Society Publishers Edition, Canada.

List of Exercises / Practicals:

1	Visit to a large Project undertaken by Local Bodies / Development Authority and submit report on Carrying Capacity / Environmental Thresholds / Ecological Footprints.

List of Assignments/Tests:

1	Test on Unit 1 or Unit 2.
2	Assignment on Unit 4.

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Environmental Planning**			
Name of the Subject: **PLANNING LEGISLATION**			
Subject Code: **EP.C.3.5**	Semester: **Third (Environmental Planning)**		
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3	
Teaching Scheme	**Examination Scheme**		
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**		
Practical : **--**	Internal Assessment: **Marks 50**		
Aim: **To impart knowledge of various Legislations on Urban Planning and Development.**			
Objective:			
1.	**To educate students to basic concept of Law and Indian Constitution in general and 73rd and 74th Constitution Amendments is particular.**		
2.	**To expose students to Development Control Rules, Zoning Laws.**		
Pre-Requisites: --			

Contents		Hrs
Unit - 1	**Planning Legislation – General** Concept of Law: Source of law (i.e. custom. legislation and precedent), meaning of terms of law, legislation, ordinance, Bill, Act, Regulations and Bye-laws. Significance of law and its relationship to urban planning benefit of statutory provisions-eminent domain and police powers.	9
Unit - 2	**Indian Constitution and Planning Legislation** Indian Constitution: Concept and contents, provisions, regarding property rights, Legislative competence of staff and central Government to enact town planning legislation. Evolution of Planning legislation. An over view of legal tools connected with Urban Planning and Development, Town and Country Planning Act, Improvement Trusts Act, Urban Planning and Development Authorities Act - objectives, content, procedures for preparation and implementation of regional plans, Master Plans and Town Planning schemes.	15
Unit - 3	**Planning Legislation – Acts and Amendments** Concept of Arbitration; Betterment levy; development charges and public participation in Statutory planning process; Concepts of Structure Plan; local plan/and action plan under the English law. Land Acquisition Act 1884 - Basic concept, procedure for compulsory acquisition of property and determination of compensation.	12
Unit - 4	**Land and Other Legislation** Significance of Land Development Control – objectives, contents and legal tools, critical evolution of zoning, sub-division regulations, building regulations and bye-laws, Development Code, Zoning law and law relating to periphery control. 73rd and 74th Constitutional Amendment Act, 1992.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	ITPI	Planning Legislation and professional Practice		ITPI, New Delhi

2.	Bijlani, H.U. & Balachandran	Law and Urban Land	1978	IIPA, New Delhi
3.	GoI	UDPFI Guidelines Vol. 2A	1996	ITPI, New Delhi
4.	GoI	Indian Contract Act 1872; Indian Contract Act 1872; The Arbitration and Conciliation Act 1996. Constitution of India; Constitution (73rd & 74th Amendment) Acts 1992; Model Rent control Legislation; Slum (Improvement and Clearance) Act 1956; Land Acquisition Act 1894 and amendments thereof; NCR Planning Board Act, Environment (Protection) Act 1986; Model Town Planning and Regional Planning Development Law; and other acts		
5.	Government of various States	State Acts related town planning, slum clearance, municipalities, development authorities, Apartment Act, Rent Control Act, property laws, property tax, assessment, lease, and registration, etc		
6.	Edgar F N Ribeiro	Reassessment of Urban Planning and Development Regulations in Asian Cities	1999	United Nations Centre for Human Settlements
7.	Amiya Kumar Das,	Urban Planning in India	2007	Rawat Publishers and Distributors
List of Exercises / Practicals:				
1	Visit to Legal Cell / Section of Local Body / Development Authority and submit report.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Environmental Planning**		
Name of the Subject: **ENVIRONMENTAL PLANNING STUDIO - II**		
Subject Code: **EP.C.3.6**	Semester: **Third (Environmental Planning)**	
Duration: **240 Hours**	Maximum Marks: **500**	Credits: (0 + 10) = **10**
Teaching Scheme	**Examination Scheme**	
Lecture : **3 hrs/week**	End Semester Exam: **Marks 200**	
Practical : **12 hrs / week**	Internal Assessment: **Marks 300**	

Aim: **To undertake settlement based study focusing on Environmental Management / Conservation Plan.**

Objective:

1. **Introduction to Geo-informatics, Satellite Images and Remote Sensing and Environmental Information System.**
2. **To assess the status of case study Town and to prepare Environmental Conservation / Management Plan.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Geo-Informatics Laboratory Training** The laboratory training will be conducted in accordance with the studio exercise. Spatial data structures, vector and raster; spatial analysis and decision making using GIS; Environmental data sources; Exposure to Environmental Information System (ENVIS).	40
Unit - 2	**Management and Conservation Plan** Planning and Design Studio - Exercises pertaining to: A Settlements / Region • Management Plan • Conservation Plan	200

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	C.J. Barrow	Environmental management for sustainable development	2006	RoutIdge Publication,
2.	V H Dale	Applying Ecological Principles to Land Management	2001	Springer-Verlag GmbH
3.	James K.Lein,	Integrated environmental planning,	1998	International Publication
4.	Andres Duany, Jeff Speck and Mike Lydon	The Smart Growth Manual	2009	McGraw-Hill

List of Exercises / Practicals:

1	Visit to a case study town and submit report on Conservation / Management Aspects.

List of Assignments/Tests:

1	External and Internal Jury.

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Environmental Planning**		
Name of the Subject: **FORMULATION, FINANCING AND MANAGEMENT OF DEVELOPMENT PROJECTS**		
Subject Code: **EP.C.4.1**	Semester: **Fourth (Environmental Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study Formulation, Financing and Management Techniques of Development Projects.**

Objective:

1. **To study Role and Methodology of Project Identification and Formulation.**
2. **To study Cost Benefit Analysis, Risk and Trend Analysis and Logical Framework Analysis.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Role and Methodology of Project Identification and Formulation** The role of project formulation and appraisal in the Planning process; Methodology for project identification and formulation: Preparation of Preliminary studies, Feasibility Reports and Detailed Project Reports. Appraisal of Project, Monitoring of Projects; Reports: Review of project appraisal techniques adopted by financing agencies.	12
Unit - 2	**Cost Benefit Analysis** Financial cost-benefit analysis: cash flow techniques, Net present value, internal rate of return. Benefit-cost ratio, etc., Exercises and case studies; Social cost-benefit analysis: Tradeoff between efficiency and equity goals in project appraisal, measurement of direct and indirect costs and benefits in different sectors of urban and rural development, Case studies.	15
Unit - 3	**Risk and Trend Analysis** Risk and uncertainty in the project environment; sensitivity and profitability 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.	12
Unit - 4	**Logical Framework Analysis** Methodology and case studies.	9

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	K.Puttaswamaiah	Cost-Benefit Analysis: With Reference to Environment and Ecology	2002	Transaction Publishers ,New Jersey
2	Colin H. Kirkpatrick, John Weiss	Cost-benefit analysis and project appraisal in developing countries	1996	Edward Elgar Publishing Inc.
3	D. K Jain.	Project planning and appraisal in planned economy the Indian context	1981	Uppal Publishing,

4.	Srivastava, U.K.	Project planning, financing, implementation and evaluation	1981	IIM, Ahmedabad
5.	Chandra, Prasanna	Projects : Planning, analysis, selection, implementation and review	1995	Tata McGraw Hill
List of Exercises / Practicals:				
1	Visit to a large Development Project undertaken by Local Body / Development Authority and submit report on cost Benefit Analysis.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Environmental Planning**		
Name of the Subject: **SEMINAR ON EMERGING ENVIRONMENTAL CONCEPTS**		
Subject Code: **EP.C.4.2**	Semester: **Fourth (Environmental Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To give exposure to students on Emerging Environmental Concepts.**

Objective:

1. **To familiarize the students to Environmental Information Systems and Models.**
2. **To familiarize the students to Environmental Security and Environmental Disasters.**

Pre-Requisites: --

Contents	Hrs
• Environmental Information Systems and Models • Sustainable Settlements • Ecological Footprints • Environmental Security • Environmental Disaster • Ecotourism • Urban Ecology • Energy Planning in Urban Settlements. • Any others	48

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Jagbir Singh	Ecotourism	2010	I.K. International Publishing House Pvt. Ltd
2.	Matthias Richter, Ulrike Weiland	Applied Urban Ecology: A Global Framework	2012	Blackwell Publishing Ltd.
3.	Jane,,Bicknell	Adapting cities to climate change: understanding and addressing the development change	2009	Earthscan London,
4.	Jagbir Singh	Disaster Management: Future challenges and opportunities	2007	I.K. International Publishing House Pvt. Ltd
5.	John Diamond, JoyeeLiddle,Alan Southern, Philip Osc	Urban Regeneration Management	2010	Routledge, London

List of Exercises / Practicals:

1	Visit to Disaster Mitigation and Management Agency and submit report on Environment

	Disaster Mitigation and Management aspects.
List of Assignments/Tests:	
1	Assignment on Energy Planning in Urban Settlement.

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Environmental Planning**			
Name of the Subject: **THESIS**			
Subject Code: **EP.C.4.3**	Semester: **Fourth (Environmental Planning)**		
Duration: **384 Hours**	Maximum Marks: **800**	Credits: (0 + 16) = **16**	
Teaching Scheme	**Examination Scheme**		
Lecture : **-- hrs/week**	End Semester Exam: **Marks 300**		
Practical : **24 hrs / week**	Internal Assessment: **Marks 500**		
Aim: **To undertake independent study in the field of Environmental Planning.**			
Objective:			
1	**To develop a basic understanding of the area chosen for study (by carrying out a detailed literature review).**		
2	**To undertake detailed Exploration of the topic (by way of Surveys and Studies).**		
3	**To identify issues and concerns those emerge out of the study and suggest Recommendations.**		
Pre-Requisites: --			
Contents			Hrs
Thesis incorporating aspects of environmental analysis and spatial climate will be prepared. The students are required to carry out independent research and prepare a thesis on a topic on urban planning selected by them and approved the faculty under the supervision of a research guide allocated by the department.			384

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Brubaker, D.L. and Thomas, R.M.	Thesis and Dissertations: A Guide to Planning, Research and Writing.	-	-
2.	Rowena Murray	How to Write a Thesis (3rd Edition)	-	Open University Press
3.	F. Abdul Rahim	Thesis Writing	2005	New Age International (P) Limited Publishers, New Delhi.
4.	Kastens, K. Pfirman, S., Stute, M., Abbott, D. and Scholz, C.	How to Write Your Thesis	-	Colombian University
5.	Bracken, I.	Urban Planning Methods, Research and Policy Analysis	2008	RoutIdge
6.	Wang, X., Von Hofpe, R.	Research Methods in Urban and Regional Planning	2007	Springer
7.	You Tube	Tools for Academic Research in Urban Design and Planning	2011	You Tube Video.

List of Exercises / Practicals:	
1	Field visit to Collect Data on selected Topic of Research.

List of Assignments/Tests:	
1	Marked Reviews at different Stages of completion of Research Work.
2	Internal and External Jury.

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Housing**		
Name of the Subject: **URBAN AND RURAL HOUSING POLICIES AND PROGRAMMES**		
Subject Code: **H.C.2.1**	Semester: **Second (Housing)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study Urban and Rural Housing Policies and Programmes in India and the Developing World.**

Objective:

1. **To introduce the basic premises for Policy Preparation and Content of various Housing Policies and Programmes.**
2. **To familiarize the students with the Real World Issues and Evaluate Success and Failure of Policies and Programmes**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Introduction** Urban and Rural Housing Policies and its role in national development, objectives of policy in relation to settlement planning, basic components of housing policy and programmes formulation in urban and rural areas, housing policies in India and abroad, its impact and consequences on housing development, housing policy and their focus in different developing and developed countries, their significance in provision of housing programmes for low-income groups, their formulation implementation and evaluation role of international and national funding agencies in housing programmes special housing programmes in different countries.	9
Unit - 2	**Housing in Rural India** Socio-economic profile of rural India and rural housing conditions-types of traditional building materials and construction methods, house types, rural housing norms, standards and design, access to infrastructure, improvement in quality of life in rural areas, rural health and sanitation, environmental improvement in villages, concept of integrated rural housing development, rural housing schemes, impact of large development projects and community development in rural areas, special needs for housing for tribal.	12
Unit - 3	**Global Overview** Review of urban and rural housing policies in various countries with particular focus on South East Asian countries	12
Unit - 4	**Case Studies of Policies and Programmes** Various urban and rural housing programmes including the current JNNURM, RAY, Bharat Nirman, PURA, etc.	15

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Government of India	National Urban Housing and Habitat Policy	2007	Ministry of Housing and Urban Poverty Alleviation

2.	Glaesar, Bernhard	Housing, Sustainable Development and Rural Poor	1995	Sage, New Delhi
3.	Friedrichs, J	Affordable Housing and the Homeless	1988	Walter de Grugten & Co, Berlin
4.	Rao, P.S.N.	Urban Governance and Management	2005	Kanishka Pub. and IIPA, New Delhi
List of Exercises / Practicals:				
1	Visit to HUDCO / Housing Department of State Governments and submit report.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 3 or Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Housing**		
Name of the Subject: **HOUSING STANDARDS, DESIGN AND PROJECTS**		
Subject Code: **H.C.2.2**	Semester: **Second (Housing)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study Housing Standards, Design and Projects.**

Objective:

1. **To study Neighborhood Planning, Design Standards with Significance to Housing.**
2. **To study Technique of Site Analysis and to Study Development Controls for Plotted Development and Group Housing.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Introduction** Neighborhood planning, design standards and their significance in housing process, socio-economic and aesthetic, environmental factors affecting layouts, various concepts of layout planning, row and multi storied housing, layout optimization techniques, appropriate DU design.	9
Unit - 2	**Site Planning** Site analysis, visual design factors, consideration for infrastructure, organization of space, criteria for location of blocks and landscape elements, energy efficient design, methodology for formulation of housing projects, design considerations in housing projects.	15
Unit - 3	**Infrastructure Design** Detailed analysis on water supply, sewerage, drainage solid waste disposal, electricity, roads and transportation and all community facilities, standards for physical and social infrastructure layouts, development controls and phasing, specific consideration, for plotted development and group housing, site and services project.	15
Unit - 4	**Case Studies** Case studies of housing projects.	9

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1	William M Rohe and Lauren B Gates	Planning with Neighbourhoods	1985	University of North Carolina Press
2	William Peterman	Neighbourhood Planning and Community Based Development	2000	Sage Publications India Pvt Ltd, GK I , New Delhi
3	James A LaGro Jr.	Site Analysis A Contextual Approach to Sustainable Land	2008	John Wiley and Sons,Inc., Hoboken, New Jersey

		Planning and Site Design		
4	P N Khanna	Indian Practical Civil Engineers' Handbook	1999	Engineers Publishers
List of Exercises / Practicals:				
1	Visit to a live project of a Sector or Neighbourhood in any city and submit Report.			
List of Assignments/ Tests:				
1	Test on Unit 1 or Unit 2.			
2	Case study based Assignment on Housing project.			

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Housing**		
Name of the Subject: **MATERIALS, TECHNOLOGY AND INFRASTRUCTURE**		
Subject Code: **H.C.2.3**	Semester: **Second (Housing)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study various Technologies for Housing Development along with Physical Infrastructure.**

Objective:

1. **To expose the students to Traditional and Conventional Building Materials.**
2. **To study Cost Reducing and Environment friendly Technologies for Housing Projects.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**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.	12
Unit - 2	**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.	12
Unit - 3	**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.	12
Unit - 4	**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.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher

1.	BMTPC, GoI	Brochures of Building Materials and Technology Promotion Council (BMTPC), Government of India		BMTPC, New Delhi
2.	BMTPC	Directory of Indian Building Materials and Products	2009	BMTPC, New Delhi
3.	Government of India	Report of High Powered Expert Committee for Estimating Investment Requirements for Urban Infrastructure and Services	2011	GoI
List of Exercises / Practicals:				
1	Visit to BMPTC or State Housing Board or Regional Office of HUDCO and submit Report.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Housing**		
Name of the Subject: **URBANIZATION AND LAND MANAGEMENT**		
Subject Code: **H.C.2.4**	Semester: **Second (Housing)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	
Aim: **To study Urbanization along with Land Policies and Land Management.**		
Objective:		
1.	**To study Urbanization with reference to Asia and Pacific.**	
2.	**To study Land Policies and various Approaches for Land Management.**	
Pre-Requisites: --		

Contents		Hrs
Unit - 1	**Overview of Urbanization** Global population change and urbanization, Regional perspectives on population and urbanization with special reference to Asia and Pacific; Emergence of large cities; Impact of urbanization, globalization and economic policies.	9
Unit - 2	**Peculiarities of Land in India** The status of land in the Constitution of India, peculiar nature of land markets; Factors affecting supply and demand of land for housing; Role of Fiscal policies and development regulations of land market.	12
Unit - 3	**Land Policies** Land policy objectives and policy options for public intervention; Techniques of land assembly and expropriation, development components and financing land development; Institutional and political concerns in land management.	12
Unit - 4	**Types of Land Management** Various approaches viz. land pooling/land readjustment, TP Schemes, Public Private Partnerships for land assembly, role of the private sector in land assembly, land management thru' Township Policies of various state governments, international and domestic case studies.	15

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	P.S.N. Rao	Urban Governance and Management	2006	IIPA and Kanishka Publications, Delhi
2.	Sivaramakrishnan, K.C., et.al	Handbook of Urbanization in India	2005	India Oxford University Press
3.	Habibullah Wajahat	Land Reforms in India	2005	Sage Publications

List of Exercises / Practicals:

1	Visit to Local Body / Development Authority and submit Report on their Land Policies and Management.

List of Assignments/Tests:	
1	Test on Unit 1 or Unit 2.
2	Assignment on Unit 4.

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Housing**		
Name of the Subject: **HOUSING FINANCE AND PROJECT FORMULATION**		
Subject Code: **H.C.2.5**	Semester: **Second (Housing)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study Basic Concepts of Housing Finance and Project Formulation.**

Objective:

1. **To introduce the basic Terminology and Concepts of Housing Finance.**
2. **To provide an appreciation of the Housing Finance Methodologies and Emerging Issues.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Financial Environment** Financial environment at the national level, financial system and regulation, Characteristics of housing finance, policy for housing finance in national plans.	12
Unit - 2	**Sources and Methods of Financing** 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.	12
Unit - 3	**Roles of Organizations** Role of HUDCO, NHB, HFIs, various international donor/financing agencies, micro finance institutions, rural housing finance.	12
Unit - 4	**Projects and Financial Feasibility** Financial feasibility of projects, various financial instruments, concepts of IRR and NPV, basics of cash flow analysis, financial structuring of projects, preparation of DPR.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Watanabe Masakazu (ed.)	New Directions in Asian Housing Finance	2000	IFC, World Bank, Washington
2.	Subbulakshmi, V. (ed.)	Housing Finance in India	2004	ICFAI University Press, Hyderabad
3.	Chandra, Prasanna	Project Formulation	2010	McGraw Hill

List of Exercises / Practicals:

1	Visit to Finance / Project Formulation Division of HUDCO / State Housing Board and submit Report.

List of Assignments/Tests:	
1	Test on Unit 1 or Unit 2.
2	Assignment on Unit 3 or Unit 4.

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Housing**		
Name of the Subject: **HOUSING STUDIO - I**		
Subject Code: **H.C.2.6**	Semester: **Second (Housing)**	
Duration: **240 Hours**	Maximum Marks: **500**	Credits: (0 + 10) = **10**
Teaching Scheme	**Examination Scheme**	
Lecture : **3 hrs/week**	End Semester Exam: **Marks 200**	
Practical : **12 hrs / week**	Internal Assessment: **Marks 300**	

Aim: **To evolve comprehensive Housing Development Strategy for a Selected City.**

Objective:

1. **Introduction to Aerial Photography, Remote Sensing, Images Geometry and Conceptual Models of Spatial and Non-spatial Information System.**
2. **To appraise the students about Estimating Housing Shortage, Projecting Alternative Scenario's for Housing Development.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Survey Techniques, Remote Sensing and GIS** Introduction to aerial photography, remote sensing, images geometry, image quality etc. date acquisition aerial, false color and thermal photography and other remote sensing applications; Applications in regional planning morphology, contour building, geological formation, social classifications, settlement patterns, regional landscape features, water bodies, forest reserves, deforested areas, transport network-road, water irrigation systems, plantation areas, cropping patterns flora and fauna, sanctuary areas etc. interpretations and uses of aerial photography in locational analysis of regional networks, engineering works such as dams and reservoirs, terminal facilities such as airports strategic and military installation, regional potential recreational areas and identification of urban expansion areas. Conceptual model of spatial and non-spatial information system, digital, editing and structuring of map data, spatial data analysis: raster and vector based overview of GIS packages global positioning system.	40
Unit - 2	**Housing Strategy** The objective of this exercise is 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 scenario's for housing development. The studies need to be carried out mainly thorough secondary sources. A field visit to any town/city in India has to be made.	200

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Bhatia, S.C.	Fundamentals of Remote Sensing	2008	Atlantic Publications, Delhi
2.	Longley Paula, et al	Geographic Information Systems and Science	2001	John Whiley and Sons Ltd., Newyork

3.	Mumtaz Babar, et al	Urban Housing Strategies	1986	DPU, UK
List of Exercises / Practicals:				
1	Field visit to a city / towns and submit report focusing on Housing.			
List of Assignments/Tests:				
1	External and Internal Jury.			

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Housing**		
Name of the Subject: **REAL ESTATE AND HOUSING MARKETS**		
Subject Code: **H.C.3.1**	Semester: **Third (Housing)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study the Basic Principles and Practices of Real Estate and Housing Markets.**

Objective:

1. **To introduce the Basic Definitions and Concepts related to Real Estate Legislation, Planning and Management and Housing Markets.**
2. **To familiarize the students with the Real World Issues through Case Studies with particular reference to Indian cities.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Introduction** 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,	9
Unit - 2	**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.	12
Unit - 3	**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.	12
Unit - 4	**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.	15

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	RATCLIFF, John, et.al.	Urban Planning and Real Estate Development	3rd	Routledge
2.	WEIMER, Arthur M and HOYT,	Principles of Real Estate	6^{th}	The Ronald Press Co., NY

	Homer			
3.	GRIGSBY, William G	Housing Markets and Public Policy	1963	U of Pennsylvania Press
List of Exercises / Practicals:				
1	Field visit to large scale Real Estate Project and submit report.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 3 or Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Housing**		
Name of the Subject: **INFORMAL HOUSING, SLUMS AND POVERTY**		
Subject Code: **H.C.3.2**	Semester: **Third (Housing)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study Informal Housing, Slums and Poverty.**

Objective:

1. **To study the Problems and Issues of Informal Sector and their Housing Conditions.**
2. **To study various Strategies of Government and NGOs for the Improvement of Slums.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Overview of Informal Housing** 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.	12
Unit - 2	**Informal Economy** Linkages of informal economy-supportive policies of settlement upgrading and options of tenure security. Impacts and obstacles to regularization. Integrated, participatory improvement approaches.	12
Unit - 3	**Slums and Government Intervention** Process of slum formation, causes and consequences, approaches to tackle the challenge of slums, relocation, rehabilitation, in-situ upgradation, etc.	12
Unit - 4	**Civil Society and Poverty** 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.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1	UNHS Programme	The Challenge of Slums Global Report on Human Settlements 2003	2003	UN-Habitat Earthsacn Publishing, London
2	Dr. D Goswami	Housing and Urban Poverty Alleviation	2012	SAAD Publications, Delhi
3	Kalpana Sharma	Rediscovering Dharavi: Stories from Asia's Largest Slum	2000	Penguin Books
4	Kishor C Samal	Informal Sector: Concept, Dynamics, Linkages &	2008	Concept Publishing Company, New Delhi 59

		Migration		
List of Exercises / Practicals:				
1	Visit to slums and squatter settlements and submit report.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 3 or Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Housing**		
Name of the Subject: **DISASTER MITIGATION AND MANAGEMENT**		
Subject Code: **H.C.3.3**	Semester: **: Third (Housing)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study various Disasters and its Impact on Human Settlements.**

Objective:

1. **To study Planning of Disaster Prone Areas and its Impact on Human Settlements.**
2. **To know various Disaster Mitigation Measures and Preparedness.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Introduction to Disasters** Natural and man-made disasters, meaning, factors and significance, causes and effects, global and local disaster profile.	9
Unit - 2	**Planning for Disaster Prone Areas – I** Typology of disasters in India, human behavior and response, scope and objectives of disaster mitigation / preparedness and response / prerequisites for preparedness planning; action plans and procedures, training issues and models, checklists/disaster response planning, roles and responsibilities of various agencies/emergency operations support and management, community participation, public awareness.	15
Unit - 3	**Planning for Disaster Prone Areas – II** Planning for disaster prone areas, disaster mapping, vulnerability analysis, vulnerability atlas, predictability, forecasting and warning, relief measures, reconstruction and rehabilitation, disaster preparedness plan land use zoning for disaster management, infrastructure management skill assessment.	15
Unit - 4	**Disaster Resistant Housing** Disaster resistant housing construction practices and codes, engineered and non-engineered structures, preparedness for climate change, role of specialized agencies for disaster management.	9

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1	UNHS Programme	Mitigating the impacts of Disasters: Policy Directions	Abridged Edition 2007	UN-Habitat Earthsacn Publishing, London
2	Shirish B Patel Aromar Revi, Ed	Recovering from Earthquakes, Response Reconstruction and Impact Mitigation in India	2010	Routledge, Tolstoy Marg, New Delhi

3	Satish Modh	Introduction To Disaster Management	2010	Macmillan Publishers India Limited, New Delhi
4	Committee on Disaster Research in the Social Sciences: Future Challenges and Opportunities, National Research Council	Facing Hazards and Disasters: Understanding Human Dimensions	2006	The National Academies Press, Washington DC
List of Exercises / Practicals:				
1	Visit to Agencies involved in Disaster Mitigation and submit report.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 3 or Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Housing**		
Name of the Subject: **LEGISLATION AND PROFESSIONAL PRACTICE**		
Subject Code: **H.C.3.4**	Semester: **Third (Housing)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To impart knowledge of various Legislations related to Housing and Spatial Planning and to make students understand their Roles and Responsibilities as Professional Planner.**

Objective:

1. **To make students understand, the Interface between Legislation and Urban Planning and to educate students regarding Basic Concept of Law and Indian Constitution and the requirements of various Acts, Laws, Rules and Regulations related to Housing and Urban Planning.**
2. **To understand the Scope, Nature and Procedure of Professional Practice; prepare Consultancy Proposals and quote fees and charges for professional work in housing and spatial planning.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Introduction** Concept of law, legislation, ordinance, bill, Act Regulation and by-laws, provision regarding property rights, legal right, legislative competence of state and central Government to enact town planning legislation, concept of Eminent Domain and Police Powers.	9
Unit - 2	**Law and Urban Planning** Significance of law and its relationship to urban planning benefits of statutory backing of planning schemes, public participation in statutory planning process, evolution of planning legislation and overview of legal tools connected with urban planning and development.	12
Unit - 3	**Professional Practice** Aims and objectives of professional institute 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, role in interdisciplinary groups, role in decision making processes and the process in relation to varied consultancy assignment of planning.	15
Unit - 4	**Various Acts** Urban planning and development authority act, housing board act. Improvement trust act, Slum clearance act, Apartment act, Rent control act, Municipal act introduction to property law, property tax, assessment, lease, registration, etc., cooperative act.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	ITPI	Planning Legislation and professional Practice		ITPI, New Delhi
2.	Bijlani, H.U. &	Law and Urban Land	1978	IIPA, New Delhi

	Balachandran			
3.	GoI	UDPFI Guidelines Vol. 2A	1996	ITPI, New Delhi
4.	GoI	Indian Contract Act 1872; Indian Contract Act 1872; The Arbitration and Conciliation Act 1996. Constitution of India; Constitution (73rd & 74th Amendment) Acts 1992; Model Rent control Legislation; Slum (Improvement and Clearance) Act 1956; Land Acquisition Act 1894 and amendments thereof; NCR Planning Board Act, Environment (Protection) Act 1986; Model Town Planning and Regional Planning Development Law; and other acts		
5.	Government of various States	State Acts related town planning, slum clearance, municipalities, development authorities, Apartment Act, Rent Control Act, property laws, property tax, assessment, lease, and registration, etc		
6.	Kulshrestha, S. K.	Urban and Regional Planning in India: Handbook for Professional Practice	2012	Sage Publications, New Delhi
7.	ITPI	Conditions of Engagement of Professional Services and Scale of Professional Fee and Charges	2011	ITPI, New Delhi
8.	CPWD	CPWD Manual 2012	2012	CPWD, New Delhi
9.	Mishra, G.K. and Rao, P.S.N.	Housing Legislation in India	2000	Kanishka Publications, Delhi.
10.	Agarwal, V.K.	Environment Laws in India: Challenges for Enforcement	2005	Bulletin of the National Institute of Ecology, Jaipur
11.	Government of India	Land Acquisition, Rehabilitation and Resettlement Bill	2011	GoI
List of Exercises / Practicals:				
1	Visit to the Office of Senior Planning Professional / Consultant and submit report.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			

2	Assignment on Unit 3 or Unit 4.

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Housing**		
Name of the Subject: **INCLUSION, PARTICIPATION AND COMMUNICATION**		
Subject Code: **H.C.3.5**	Semester: **Third (Housing)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study the Significance of Communication, Participation and Inclusion in Urban and Regional Planning.**

Objective:

1. **To understand the Role of Communication in enhancing Public Participation and Inclusion of Stakeholders in a Planning Process.**
2. **To understand the Methods and Arenas of perpetuating Intense Communication and Involvement in Decision Making Processes in Planning.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Introduction** Importance of communication for town planners, role of effective communication in society, understanding concept of inclusion, community based organizations, NGOs, RWAs, SHGs,	12
Unit - 2	**Processes and Techniques of Communication** Understanding participatory processes, techniques of participation, methods of communication, written, oral and visual communication, objective of communication, developing a communication strategy, writing technical reports.	12
Unit - 3	**Mandatory Participation** Social audit, community participation law.	12
Unit - 4	**Communication in Practice and Cases** Preparing maps and other documents, conducting communication with small groups, stakeholders and the masses, organization of consultative meetings, managing community / participatory processes, role of elected representatives in participatory processes, community participation in project formulation; Best practices and case studies.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1	Healey, P.	Collaborative Planning: Shaping Places in Fragmented Societies	1997	Macmillan, London.
2	Smith, A. Dodge, M. Doyle S.	Visual Communication in Urban Planning and Urban Design,	1998	Centre for Advanced Spatial Analysis, London.
3	Fischler, R.	Communicative Planning Theory: A Foucauldian	2000	

		Assessment, Journal of Planning Education and Research 19(4): 358–68.		
4	Sager, T.	Communicative Planning Theory,	1994	Avebury, Aldershot, Hants, England.
List of Exercises / Practicals:				
1	Visit to a planning organization / Department of Central or State Governments to observe how communication takes place and submit report.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 3 or Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Housing**			
Name of the Subject: **HOUSING STUDIO - II**			
Subject Code: **H.C.3.6**	Semester: **Third (Housing)**		
Duration: **240 Hours**	Maximum Marks: **500**	Credits: (0 + 10) = **10**	
Teaching Scheme	**Examination Scheme**		
Lecture : **3 hrs/week**	End Semester Exam: **Marks 200**		
Practical : **12 hrs / week**	Internal Assessment: **Marks 300**		

Aim: **To undertake City Specific Project on Housing.**

Objective:

1. **Introduction to Geo-spatial Analysis, Customization of Geo-information.**
2. **To undertake Housing Project involving Site Selection, Analysis; Project Formulation and Design of selected Area.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**GIS Applications in Housing** Network analysis, digital elevation model (DEM) and digital terrain model (DTM) Geospatial analysis, internet GIS, decision support system(DSS), automated mapping and facility management (AM/FM), open GIS overview, customization of geo information; Inputs into and integration with housing project formulation and design studio exercise.	40
Unit - 2	**Project Formulation and Design** Site selection, site analysis, feasibility studies, to formulate the project and design of selected area, Greenfield or redevelopment, which shall include development options concept for dwellings, plans and layout, costing, pricing, financing, phasing, implementation and management and post occupancy estate management, financial feasibility.	200

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Longley Paul, A, et. al	Geographic Information Systems and Science	2001	John Wiley & Sons Ltd., NY
2.	Payne, Geoffrey K.	Urban Projects Manual	1988	DPU, UK
3.	Caminos, Harato, et. at	Urbanization Primer	1988	John Wiley & Sons, UK

List of Exercises / Practicals:

1	Visit to a Local Body / Development Authority or Housing Board and submit report on Housing Development Project undertaken by them.

List of Assignments/Tests:

1	External and Internal Jury.

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Housing**		
Name of the Subject: **GOVERNANCE AND MANAGEMENT FOR HOUSING**		
Subject Code: **H.C.4.1**	Semester: **Fourth (Housing)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study the Role of Government, Private Sector and the Third Sector in the Management of Housing.**

Objective:

1. **To understand the Role of the State in the Housing Sector at National, State and Local levels.**
2. **To learn how to Prepare a fully Integrated Housing Project from Inception to Implementation.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Introduction** Principles of good governance, Public governance in India, overview of urban governance structure in India, governance for the housing sector.	9
Unit - 2	**Organizations** Definition and concepts in organization, factors affecting organizational structure administrative context of housing organization in India, organizational theories and their effectiveness, housing organizations in India at national, state and local level, role of improvement trusts, housing boards, development authorities and slum improvement boards and cooperatives.	12
Unit - 3	**Partnerships** Role of private sector and NGOs, role of financing agencies and linkages with other agencies, relationship between housing and non housing organizations internal administrative problems of housing agencies public – private partnerships, joint ventures, organizational reforms and privatization, outsourcing and contracts.	12
Unit - 4	**Management Concepts and Project Management** Need for housing management, basic elements of management, planning, organization, staffing, coordination and monitoring and its relevance of housing sector; Importance of leadership development, communication and motivation; National goals, political system affecting development management; Managing and monitoring housing projects. Participatory management processes and managing joint ventures. Post occupancy management of housing estates.	15

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Baud, I.S.A. and Wit, J. de	New Forms of Urban Governance in India: shifts, models, networks and contestations	2008	Sage New Delhi.
2.	Jayal, N.G.,	Local Governance in India:	2006	Oxford University Press, New

	Prakash, A. and Sharma, P.K.	decentralization and beyond		Delhi.
3.	Rhodes, R.A.W.	Understanding Governance: policy networks, governance, reflexivity and accountability	1997	Open University Press, Maidenhead, GB, Philadelphia
4.	Pugh, C.	The Theory and Practice of Housing Sector Development for Developing Countries – 1999, Housing Studies, Vol.16, Issue 4, pp.399-423.	2001	

List of Exercises / Practicals:	
1	Visit to an organization engaged in planning, development and financing of Housing and submit report.
List of Assignments/Tests:	
1	Test on Unit 1 or Unit 2.
2	Assignment on Unit 3 or Unit 4.

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Housing**		
Name of the Subject: **HOUSING FOR SPECIAL AREAS AND GROUPS**		
Subject Code: **H.C.4.2**	Semester: **Fourth (Housing)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study the Housing for Special Areas and Groups.**

Objective:

1. **To introduce the Basic Characteristics of Special Areas and Groups with reference to Housing.**
2. **To study the Real World Issues through Case Studies with particular reference to Indian Cities.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Special Areas** Inner City Housing: Evolution and Historical Background, community, spatial Characteristics, housing transformation of core city, impact of transformation, Problems of inner cities, policies and programmes. Fringes / Peri-urban / Sub-urban Housing: Rural urban linkages, characteristics of fringe areas, development process, various modes of land Supply in fringe area, case study with special emphasis on housing. Arid / Coastal / Hilly Region Housing: Settlement and shelter characteristics, Materials and technology, design standards, climatic factors, danger of hazards, Settlement planning, development policies and programmes.	12
Unit - 2	**Special Groups** Housing for Aged / Physically Challenged: Concept and definition of old age characteristics of aging population, profile and growth of elderly persons, classification of elderly population, problems of elderly planning and design considerations for elderly, case study with special reference to housing.	12
Unit - 3	**Housing for Women, Children and Refugees** Importance of gender in housing, housing planning and design considerations with women perspective – hierarchy of spaces at macro and micro level, shelter for low income women, design considerations for urban and rural women, housing options for different categories for single women, government schemes, case study with special reference to housing. Concept of refuges, types of refuges, norms for treatment of refugees, refugees law, refugees and housing, problems of refugees, planning considerations for the refugees, case study areas with reference to housing.	12
Unit - 4	**Shelterless and Tribal Housing** Shelterless in the context of urban poor, psychological and social implications of poverty on homeless, homeless in metropolis, problems of homelessness, various interventions, night shelters, case studies; Socio cultural and economic profile, settlement characteristics, housing typology, housing schemes, polices and programmes, for tribal upliftment, case study area.	12

Text / Reference Books:				
S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Davis Ian (ed.)	Disasters and the Small Dwelling	1981	Pergamon Press, NY
2.	Gilroy Rose and Woods Toberta (Ed.)	Housing Women	1984	Routledge, Lond.
3.	Chant Sylvia	Gender, Urban Development and Housing	1996	UNDP, NY
4.	Airea	Single Family Dwellings	1957	AIREA Chicago, USA
5.	Musson N	Building for the Elderly	1963	Reinhold Pub., NY
List of Exercises / Practicals:				
1	Visit to HUDCO / Housing Boards to study the provision of Housing for the Special Areas and submit report.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 3 or Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Housing**		
Name of the Subject: **THESIS**		
Subject Code: **H.C.4.3**	Semester: **Fourth (Housing)**	
Duration: **384 Hours**	Maximum Marks: **800**	Credits: (0 + 16) = **16**
Teaching Scheme	**Examination Scheme**	
Lecture : **-- hrs/week**	End Semester Exam: **Marks 300**	
Practical : **24 hrs / week**	Internal Assessment: **Marks 500**	

Aim: **To undertake independent study in the field of Housing.**

Objective:

1. **To develop a basic understanding of the area chosen for study (by carrying out a detailed literature review).**
2. **To undertake detailed exploration of the topic (by way of surveys and studies).**
3. **To identify issues and concerns those emerge out of the study and suggest recommendations.**

Pre-Requisites: --

Contents	Hrs
Every student is required to prepare a thesis on a specific topic approved by the Department as per guidelines issued from time to time.	384

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Brubaker, D.L. and Thomas, R.M.	Thesis and Dissertations: A Guide to Planning, Research and Writing.	-	-
2.	Rowena Murray	How to Write a Thesis (3rd Edition)	-	Open University Press
3.	F. Abdul Rahim	Thesis Writing	2005	New Age International (P) Limited Publishers, New Delhi.
4.	Kastens, K. Pfirman, S., Stute, M., Abbott, D. and Scholz, C.	How to Write Your Thesis	-	Colombian University
5.	Bracken, I.	Urban Planning Methods, Research and Policy Analysis	2008	Routldge
6.	Wang, X., Von Hofpe, R.	Research Methods in Urban and Regional Planning	2007	Springer
7.	You Tube	Tools for Academic Research in Urban Design and Planning	2011	You Tube Video.

List of Exercises / Practicals:

1	Field visit to Collect Data on selected Topic of Research.

List of Assignments/Tests:

1	Marked Reviews at different Stages of completion of Research Work.
2	Internal and External Jury.

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Transport Planning**		
Name of the Subject: **TRAFFIC ENGINEERING**		
Subject Code: **TP.C.2.1**	Semester: **Second (Transport Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study Traffic Engineering; its Concept, Scope and Utility.**

Objective:

1. **To provide knowledge of Design of Urban Road Infrastructure.**
2. **To familiarize students about Traffic Management, Systems and Safety.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Introduction to Basic Concepts** Definition, concepts, scope and utility of traffic engineering; relationship between the traffic flow variables, fundamental diagrams of traffic flow ; Definition of capacity and level of service, factors affecting capacity and level of service, static and dynamic PCU, Design service volume, capacity norms for urban roads with different widths.	12
Unit - 2	**Design of Urban Road Infrastructure** Urban Road cross-sectional elements- right of way, carriageway, median, service lane, footpath, curb, camber, side slope, service road etc. for different hierarchy of urban roads; geometry of horizontal curves and vertical curves of urban roads, super elevation, sight distance, access control etc. along urban roads ; Street Lightings types and design ; guard rails; traffic signs and marking; NMT facilities, road landscape design features on urban roads.	12
Unit - 3	**Design of Intersections** Types of intersections, visibility, Design principles – alignment and vertical profile, visibility, radii of curves, channelization; roundabouts- capacity and design; capacity of signalized intersection; Grade separated intersection design elements- ramp gradient, acceleration and deceleration lanes ,weaving sections, etc..	15
Unit - 4	**Traffic Management Systems and Safety** Introduction to traffic signals, warrant for signals, phasing and inter green period, saturation flow, optimization of signals, Vehicle actuated signal facilities, co-ordination of traffic signal, area traffic control system; Basic principles of regulation and its enforcement; Traffic management measures, Transport System Management techniques, Road safety- collection and analysis of accident data, accident prevention strategies.	9

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1	Papacostar, C.S. and Prevedons	Transportation Engineering and Planning	2001	Prentice Hall of India

2.	Kaliyali, L.R.	Transport Planning and Traffic Engineering		Khanna publishers
3.	O'Flaherty, C.A.	Transport Planning and Traffic Engineering		Butterworth Heinerman, An Imprint of Elsevier
List of Exercises / Practicals:				
1	Visit to Traffic and Transport Section of Local Bodies / Development Authority and submit report on the aspect of Design.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Transport Planning**			
Name of the Subject: **PUBLIC TRANSPORT PLANNING**			
Subject Code: **TP.C.2.2**	Semester: **Second (Transport Planning)**		
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3	
Teaching Scheme	**Examination Scheme**		
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**		
Practical : **--**	Internal Assessment: **Marks 50**		
Aim: **To study Public Transport Network Planning and Scheduling.**			
Objective:			
1.	**To introduce students to Public Transport System including its performance and Economic Aspects.**		
2.	**To study Infrastructure required for Bus Stops, Terminals and Depots.**		
Pre-Requisites: --			

Contents		Hrs
Unit - 1	**Introduction to Public Transport Systems** Urban passenger transport system characteristics, public transport modes, genesis of public transport system, mass transit system, Para transit system, technological features, Demand for public transport, public transport demand and supply indicators, determinants of public transport supply and demand, public transport supply and demand characteristics in cities of various sizes and socio economic setting.	9
Unit - 2	**Public Transport Performance and Economic Aspects** Physical and financial performance indicators for public transport, performance characteristics of various public transport modes including para-transit modes, Public transport fare types and pricing criteria, costs, services; price elasticity of demand; subsidy issues; regulation, privatization impacts and integration issues on public transport performance; public transport financing;	12
Unit - 3	**Public Transport Network Planning and Scheduling** Public transport based city forms and structure, Transit Oriented Development (TOD); Impact of city density, size, activity concentration on public transport patronage. Form, type and density of bus route network, bus route network planning principles; Types of bus priority measures, merits and limitations, case studies; bus operation design; bus scheduling and time table principles. !	12
Unit - 4	**Bus Stops, Terminals and Depot Infrastructure** Bus stops – types and characteristics , planning guidelines, pedestrian –public transport interface ; Bus Terminals – types, assessment of facilities and land areas for terminals; interchange- concepts, function and planning guidelines; bus depot -- concepts, function, activity and land requirements, planning guidelines	15

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1	White, P.	Public Transport Planning, Management and Operation	1988	London, Hutchinson

2.	Nash, C.A.	The Economics of Public Transport		London, Longman
3.	Vuchic, V.R.	Urban Public Transportation	1982	
4.	Chakraborty and Das, A	Transport Planning and Highway Engineering	2003	PHI
List of Exercises / Practicals:				
1	Visit to State Transport Departments or State Road Transport Corporation and submit Report.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Transport Planning**		
Name of the Subject: **URBAN TRANSPORT PLANNING**		
Subject Code: **TP.C.2.3**	Semester: **Second (Transport Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study Planning of Urban Transport.**

Objective:

1. **To study Urban Transport Trends and Policies.**
2. **To study Urban Transport Demand Modeling.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Urban Transport Trends and Policies** Urbanization trends, urban transport systems in various cities, impact of urbanization on urban transportation; mobility trends and issues; Urban transport policies and issues related to sustainability; strategies for urban transport improvement; international best practices.	12
Unit - 2	**Urban Transport and Land Use** Urban forms and structure and its impact on travel pattern, land use -transport cycle, concept of accessibility and its impact on land use, Principles of Land use-transport model	12
Unit - 3	**Transport Planning Surveys and Studies** Urban transport planning process; study area delineation, zoning; data needs; surveys and studies; analytical outputs and their use.	12
Unit - 4	**Transport Demand Modeling** Aggregate demand modeling approach- trip generation models, trip distribution models and its calibration, modal split models and its calibration, traffic assignment techniques; calibration and validation checks; alternate scenario development, model testing and evaluation; freight generation models.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Black John	Urban Transportation Planning		
2.	Hutchinson, B.G.	Principles of Urban Transportation System Planning		McGraw Hill Book
3.	Bruton, M.J.	Introduction to Transport Planning		
4.	Catanese, A.J.	New Perspective in Urban Transportation Research	1972	Lexington Books

List of Exercises / Practicals:

1	Visit to a Transport Planning Cell / Section of Development Authority and submit report.
List of Assignments/Tests:	
1	Test on Unit 1 or Unit 2.
2	Assignment on Unit 4.

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Transport Planning**		
Name of the Subject: **HIGHWAY PLANNING AND DESIGN**		
Subject Code: **TP.C.2.4**	Semester: **Second (Transport Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study Planning, Design and Management of Highways.**

Objective:

1. **To study Highway Capacity and Design Standards.**
2. **To impart knowledge to students about Highway Economics, Management System and Environment.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Highway Planning and Management** Trends in highway planning and road development in country, planning approaches for rural roads, highway administration and finance, Surveys and Investigations, traffic surveys, alignment and route location, drainage studies, soil investigation ; overview of Highway Asset Management.	12
Unit - 2	**Highway Capacity and Design Standards** Highway capacity fundamentals, norms for various types of highways; Cross sectional elements of highways- horizontal and vertical alignment, types of curves and their design – simple, compound , reverse, transition; sight distances along highways, principles of hill road design; intersections designs along highways.	12
Unit - 3	**Pavements and Drainage system** Types of pavement- rigid and flexible pavement, fundamental of pavement design skid resistance, pavement roughness, Highway drainage principles, surface drainage, road side drainage, subsurface Drainage; cross- drainage structure- culverts, causeway and bridges.	12
Unit - 4	**Highway Economics, Management System and Environment** Economics of pavement types, cost of construction and maintenance, vehicle operation cost , benefits , economic evaluation of highway projects; Highway maintenance and management system, highway asset management system; Highway environment- Noise pollution, air pollution, visual intrusion, community impacts; highway safety audit principles; highway rehabilitation.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Kalivali, L.R.	Traffic Engineering, Transport Planning	1978	Khanna Publishers
2.	Mannering, F.L.	Principles of Highway Engineering and Traffic Analysis	3rd Edition	Wiley India

3.	Kadival, L.R. and Lal, N.B.	Principles, Practices of Highway Engineering	2000	Khanna Publishers
List of Exercises / Practicals:				
1	Visit to National Highway Development Authority and submit report.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 3 or Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Transport Planning**		
Name of the Subject: **TRANSPORT ECONOMICS**		
Subject Code: **TP.C.2.5**	Semester: **Second (Transport Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study Transportation Economics.**

Objective:

1. **To study Transport Demand and Supply, including Costing and Pricing of Services.**
2. **To study Principles of Economic Appraisal of Transport Projects.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Transport Demand and Supply** Movement, transport and location, transport and economic development; Demand for transport, factors influencing demand; elasticity of demand, measures of elasticity; supply of transport, elasticity of supply; demand forecasting.	15
Unit - 2	**Costing and Pricing of Transport Services** Fixed and variable cost, joint and common cost, cost allocation, user cost internal cost, external cost, economic cost; Principle of pricing, marginal cost pricing, price discrimination , operational objectives of pricing; revenues, transport subsidies.	15
Unit - 3	**Principles of Economic Appraisal** Importance of infrastructure; basic principles of appraisal, benefit valuation, cost benefit analysis, multi criteria analysis.	9
Unit - 4	**Regulation of Transport** Theory of regulation, priorities in transport policies, regulatory reforms, coordination.	9

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Sarkar, P.K. and Maitri, V.	Theory and Applications of Transport Economics in Highway and Transport Planning	2010	Standard Publisher
2.	Hutchinson, B.G.	Principles of Urban Transport System Planning		Mc-Graw Hill Book
3.	Indian Road Congress	Manual of Economic Evaluation of Highway Projects in India	1984	Special Publication
4.	Kanafani, Abid	Transportation Demand Analysis		
5.	Papacostas, C.S. and Prevedours,	Transportation Engineering and Planning	2001	Prentice Hall

	P.D.			
6.	Stubbs, P.C., Tyson, W.J. and Dalvi, M.Q.	Transport Economics	1980	London, George Allen and Univers, Boston, Sydney.
List of Exercises / Practicals:				
1	Visit to a State Transport Corporation / Authority and submit report.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Transport Planning**			
Name of the Subject: **TRANSPORT PLANNING STUDIO - I**			
Subject Code: **TP.C.2.6**	Semester: **Second (Transport Planning)**		
Duration: **240 Hours**	Maximum Marks: **500**	Credits: (0 + 10) = **10**	
Teaching Scheme	**Examination Scheme**		
Lecture : **3 hrs/week**	End Semester Exam: **Marks 200**		
Practical : **12 hrs / week**	Internal Assessment: **Marks 300**		

Aim: **To undertake preparation of City specific Comprehensive Transport Plan.**

Objective:

1. **To strengthen the capabilities of students in the use of GIS, GPS and Traffic Engineering Software.**
2. **To learn the preparation of Comprehensive Transport Plan of a City.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Traffic Laboratory and Software Applications** The intent of this course (being part of the studio) is to strengthen the capabilities of the students in use of various instruments available in traffic laboratory. In addition, the students will be trained in the field of GIS using standard software such as ARCVIEW, ARCGIS, etc. and use of standard transport planning and traffic engineering software such as TRIPS, CUBE, VISUM, VISSIM, TRANSCAD,TRANSYT, etc.	40
Unit - 2	**Comprehensive Traffic and Transportation Plan for a City** The objective of this studio exercise is to train the students for the preparation of a comprehensive transport plan of a city. This exercise will involve field data collection on road networks, traffic and travel studies including household surveys, public transport studies, parking and terminal studies, etc. Besides secondary data collection, data collected would be analyzed to assess the existing characteristics and identify various problems and issues. Travel demand models would be developed for the base year and travel demand forecasts would be made finalized based on alternate scenarios of development, and then transport plan and proposals would be formulated.	200

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Bruton, M.J.	Introduction to Transportation Planning		
2.	Khisti, C.J and Lal, K.B.	Principles of Urban Transport System – An Introduction		
3.	Black John	Urban Transportation Planning.		

List of Exercises / Practicals:

1	Visit to a City for preparation of Comprehensive Transport Plan and submit report.

List of Assignments/Tests:

1	External and Internal Jury.

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Transport Planning**		
Name of the Subject: **TRANSPORT INFRASTRUCTURE DESIGN**		
Subject Code: **TP.C.3.1**	Semester: **Third (Transport Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To impart knowledge for Planning and Designing of Transport Infrastructure.**

Objective:

1. **To Plan and Design Road and Rail Infrastructure.**
2. **To Plan and Design Airports, Ports, Docks and Harbor Infrastructure.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Road infrastructure** Design of roundabouts; Design of grade separated intersection and interchange; design of tunnel roads; Design of bus stops and shelters, bus bays; Parking facilities (surface and multi – level) layout design; design of pedestrian facilities (subways, foot over bridges);cycle tracks; NMT facilities.	15
Unit - 2	**Rail infrastructure** Rail alignment surveys; Permanent way- rails, sleepers, ballast, sleepers; Curvature of track-types of curves, degree of curvature, super -elevation, transition curves; railway points , crossings and junctions; station yards; terminals- size, parking, circulation, platforms, passenger service and amenities area; metro rail alignment and stations design elements	12
Unit - 3	**Airports** Airport location planning; Components of air port design; Air side development – runways, taxiways, aprons, air and ground navigation and traffic control aids; Land side development – passenger building, cargo facilities, internal airport circulation and parking; Design of ground access facilities and airport support facilities etc.; land side airport connectivity planning	12
Unit - 4	**Ports, Docks and Harbour** Harbors - Types, layout, components of harbor- entrance, approach channel, turning basin, sheltered basin, breakwaters, wharves and quays, dry docks, Jetties and piers; Appurtenances to Harbour- Aprons, Transit Sheds, Warehouses, Moorings; Ports- types, components, Seaport location planning and land side connectivity.	9

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	O'Flaherty, C.A.	Transport Planning and Traffic Engineering	2006	An Imprint of Elserver
2.	Vazirani, V.N. and Chandola, S.P.	Transportation Engineering	5th Edition	Khanna Publishers

3.	Rangwala, S.C., Rangawala, K.C. and Rangawala, P.S.	Airport Engineering	2008 Eighth Edition	Charoter Publishing House Ltd.
List of Exercises / Practicals:				
1	Visit to Development Authority responsible for Planning and Designing of Airports, Ports, Docks and Harbor and submit Report.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 3 or Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Transport Planning**		
Name of the Subject: **TRANSPORT MODELING AND PLANNING**		
Subject Code: **TP.C.3.2**	Semester: **Third (Transport Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To learn Techniques and Models of Analytical Transport Planning.**

Objective:

1. **To study Travel Choice and Urban Travel Demand including Intercity Travel Demand.**
2. **To study Simplified Travel Demand Models and other Important Techniques and Models.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Urban Travel Demand** Demand for transportation, microeconomic demand theory, travel demand analysis, disaggregate travel demand models	12
Unit - 2	**Travel Choice and Inter-city Travel Demand** Measurement of choice, stated preference techniques, willingness to pay, stated discrete choice models- probit models, logit model; calibration of choice models, abstract mode choice, value of time, generalized cost etc.; Intercity travel demand characteristics, approach to intercity demand analysis, direct demand models.	12
Unit - 3	**Simplified Travel Demand Models** Sketch planning methods, demand estimation from traffic counts, Quick response techniques for travel demand estimation (QRT).	12
Unit - 4	**Other important techniques and models** Vehicle ownership forecasting, Graph theory application in network analysis, Activity based travel analysis, Land use transport models (LUTM) etc.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Kahafani, A.	Travel Demand Analysis	2nd Edition	
2.	John, D.	Metropolitan Transport Planning		
3.	Hutchinson, B.G.	Principles of Urban Transportation System Planning		Mc-Graw Hill Book

List of Exercises / Practicals:

1	Visit to Transport Planning Section / Division of Development Authority and submit report.

List of Assignments/Tests:

1	Test on Unit 1 or Unit 2.

2	Assignment on Unit 3 or Unit 4.

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Transport Planning**		
Name of the Subject: **LOGISTICS AND FREIGHT DISTRIBUTION**		
Subject Code: **TP.C.3.3**	Semester: **Third (Transport Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study Logistics and Freight Demand and Distribution Models.**

Objective:

1. **To study Logistics Concepts, Legislation, Policies and Emerging Issues.**
2. **To study Planning and designing of Warehouses and Freight Terminals.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Introduction to Logistics** Logistics concepts, important decision areas in logistics, logistics service providers, legislations, policies and emerging issues affecting logistics, Third party logistics (3PL), just- in- time (JIT), benchmarking, reverse logistics, city logistics, ITS application, e -logistics	9
Unit - 2	**Freight Demand and Distribution Aspects** Determinants of freight demand, freight demand models, product characteristics, supply chain, distribution channels, and distribution costs	12
Unit - 3	**Warehouse and Freight Terminals** Warehousing, types of various warehouses, planning and design consideration of warehouses, warehousing cost, inventory models, inventory cost, Planning of Inland Container Depot, Container Freight Stations, Integrated Freight Complex, Logistics hubs etc.	12
Unit - 4	**Facility Location and Freight Transport Planning** Historical perspectives on facility location, facility location criteria, single and multiple facility location models; Transport modes selection, vehicle route selection models (VRP), vehicle scheduling models (TSP), Transportation Problem, fleet sizing etc.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Chabra, P.D.	Computer Oriented Optimization Techniques for Traffic and Transportation System	1979	Khanna
2.	O'Flaherty, C.A.	Transport Planning and Traffic Engineering		An Imprint of Elsevier

List of Exercises / Practicals:

1	Visit to Warehouses / Freight Terminals and submit Report.

List of Assignments/Tests:	
1	Test on Unit 1 or Unit 2.
2	Assignment on Unit 4.

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Transport Planning**			
Name of the Subject: **TRAFFIC CONTROL SYSTEM AND ROAD SAFETY**			
Subject Code: **TP.C.3.4**	Semester: **Third (Transport Planning)**		
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3	
Teaching Scheme	**Examination Scheme**		
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**		
Practical : **--**	Internal Assessment: **Marks 50**		

Aim: **To study Traffic Control System and Road Safety Aspects.**

Objective:

1. **To study Traffic Signs and Signals Systems along with Traffic Control Regulations.**
2. **To study Road Safety Measures and Methods of Accident Investigation and Analysis,.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Traffic Signs and Signals Systems** Traffic signs, control aids and street furniture; Types of traffic signal systems -Fixed, vehicle actuated; coordinated control of traffic Signals, phasing and inter green period, saturation flow, optimization of signals	121
Unit - 2	**Traffic Control and Regulation** Area traffic control, urban traffic control system technology, transportation system management, highway control and incident management, intelligent vehicle highway system, highway surveillance, application of software such as TRANSYT, SCOOT etc. for traffic control and management, Traffic regulation and enforcement.	12
Unit - 3	**Accident Investigation and Analysis** Overview of accident scenario- national and international; Accident data collection and investigation studies, black spots, collision and condition diagrams; statistical techniques for analysis of accident data	12
Unit - 4	**Road Safety** Effects of road, vehicle and driver on accidents; safety of vulnerable road users; Planning and design for safety, safety during construction; Road Safety Audit (RSA) – principles, procedures and practice, code of good practice, Checklist, RSA at links and intersections; Traffic calming measures.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Whale and Mastin	Traffic and Highway Engineering		
2.	Hobbs	Traffic Engineering Practice		
3.	Salter	Traffic Analysis and Design		
4.	Kadiyali, L.R.	Transport Planning and Traffic Engineering		

List of Exercises / Practicals:

1	Visit to locations of Traffic Signals and submit report.

List of Assignments/Tests:	
1	Test on Unit and Unit 2.
2	Assignment on Unit 3 and Unit 4.

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Transport Planning**		
Name of the Subject: **TRANSPORT PLANNING STUDIO - II**		
Subject Code: **TP.C.3.5**	Semester: **Third (Transport Planning)**	
Duration: **240 Hours**	Maximum Marks: **500**	Credits: (0 + 10) = **10**
Teaching Scheme	**Examination Scheme**	
Lecture : **3 hrs/week**	End Semester Exam: **Marks 200**	
Practical : **12 hrs / week**	Internal Assessment: **Marks 300**	

Aim: **To undertake study at Urban / Inter – Urban / Regional level related to Transport Infrastructure Planning.**

Objective:

1. **To strengthen the capabilities of student in Statistics and Operation Research.**
2. **To Plan and Design a specific Project and suggest Management Strategies.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**ANALYTICAL QUANTITATIVE TECHNIQUES** The intent of this course (being a part of the studio) is to strengthen the analytical capabilities of the students in adopting well established methods and techniques in Statistics and Operations Research in their studio projects as well as their research work. The lectures will be supported by use of well established software packages such as SPSS, Mintab, etc.	40
Unit - 2	**DETAILED MICRO OR PROJECT LEVEL STUDY ON TRANSPORT INFRASTRCUTURE PLANNING, DESIGN AND MANAGEMENT FOR A CASE STUDY OF URBAN OR INTER-URBAN OR REGIONAL LEVEL** The objective of this studio exercise is to train the students for conducting a detailed project level study related to transport infrastructure planning, design and management aspects for a case study at urban, inter-urban or regional level. This exercise will involve relevant field data collection besides secondary data collection. The data collected would be analyzed to assess the existing characteristics and identify various problems and issues. Based on the scope of the study, alternate improvement, planning design and management strategies would be formulated and evaluated by taking into account costs and benefits.	200

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Kothari, C.R.	Quantitative Techniques	3rd Revision 1991	Vikash Publishing House
2.	Kothari, C.R.	An Introduction to Operation Research		
3.	Khisti, C.J. and Lal, K.B.	Principles of Urban Transport System – An Introduction		

List of Exercises / Practicals:

1	Visit to the Project Site undertaken for study and submit report.

List of Assignments/Tests:	
1	Internal and External Jury.

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Transport Planning**		
Name of the Subject: **INTELLIGENT TRANSPORT SYSTEM (ELECTIVE)**		
Subject Code: **TP.E.3.1**	Semester: **Third (Transport Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To familiarize students to Intelligent Transport System.**

Objective:

1. **To learn Definitions, Concepts and Types of Intelligent Transport System.**
2. **To learn application of ITS in Transport Infrastructure Management including Economic and Financial Analysis and Implementation.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Definitions and Concepts** Definition, concepts, types of Intelligent Transport System (ITS); ITS technology, software, equipments, etc.	9
Unit - 2	**Application in Transport Infrastructure Management** Traffic management, emergency and incident management, public transport system, terminal and depot management system, parking infrastructure management, commercial vehicle management, highway surveillance, case studies.	15
Unit - 3	**Economics of ITS** Costing of ITS, ITS benefits assessment, economic and financial analysis of ITS.	12
Unit - 4	**Implementation** ITS implementation, case studies, institutional and organizational issues.	

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1	Chowdhury, M.A. and Sadek Adel	Fundamental of Intelligent Transportation System	2003	Artech House Inc, 685 Canton Street
2.	Mc Queen, B. and Mc Queen, J.	Intelligent Transportation System Architectures	1999	Artech House, Inc 685, Canton Street
3.	Garber, N. and Hoel, L.	Traffic and Highway Engineering	3rd Edition 2002	Pacific Grover, CA: Brooks / Cole

List of Exercises / Practicals:

1	Visit to Transport Departments of Central and State Government and submit Report.

List of Assignments/Tests:

1	Test on Unit 1 or Unit 2.
2	Assignment on Unit 4.

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Transport Planning**		
Name of the Subject: **ADVANCED TRANSPORT ECONOMICS (ELECTIVE)**		
Subject Code: **TP.E.3.2**	Semester: **Third (Transport Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To learn Advanced Transport Economics.**

Objective:

1. **To learn Concepts of Engineering Economics including Estimation and Costing of Transport Infrastructure.**
2. **To learn Economic and Financial Feasibility of Transport Projects.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Concepts of Engineering Economics** Elements of costs, Present worth method, Future worth method, Annual equivalent method, rate of return method, Depreciation, project cash flows, breakeven analysis ,replacement and maintenance analysis , project risks and uncertainty	9
Unit - 2	**Estimation and Costing of Transport Infrastructure** Estimation and costing of earthwork, excavation, foundation, embankment of highways, flyovers, sidewalks, tunnels , railways , etc,; estimation and costing of drainage and drainage structure; estimation of different items along with machinery, human resources, natural resources	9
Unit - 3	**Economic feasibility of transport projects** Concept of economic feasibility; estimation of economic costs- project cost, investment strategy, phasing of capital costs, operation and maintenance costs; estimation of economic benefits- benefits to users, non-users **,** benefits to community and economy; economic appraisal- cost benefit analysis, EIRR,NPV **;** **c**ase studies	15
Unit - 4	**Financial feasibility of transport projects** Concept of financial feasibility; Project costs- capital cost, O &M costs ;project revenues- toll charges, fare box revenue, advertisement revenue etc. ,financial viability –FIRR; Case studies	15

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Sarkar P.K. and Maitri	Theory and Applications of Transport Economics in Highway and Transport Planning	2010	Standard Publisher, Naisarak, Delhi.
2.	Indian Road Congress	Manual of Economic Evaluation of Highway Projects	1989	IRC
3.	Chakraborty, M.	Estimating, Costing,	2010	The New Book Depot

		Specification and Valuation of Civil Engineering	23rd Edition	
List of Exercises / Practicals:				
1	Visit to State / Central Transport Department / Authority and submit report.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Transport Planning**			
Name of the Subject: **FINANCING TRANSPORT SYSTEMS (ELECTIVE)**			
Subject Code: **TP.E.3.3**	Semester: **Third (Transport Planning)**		
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3	
Teaching Scheme	**Examination Scheme**		
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**		
Practical : **--**	Internal Assessment: **Marks 50**		
Aim: **To study Transport Costing, Recovery and Alternative Financing Mechanisms.**			
Objective:			
1.	**To study Characteristics of Transport Infrastructure and its Institutional and Regulatory Framework.**		
2.	**To study Costing and Recovery of Transport System and its Financing Mechanisms.**		
Pre-Requisites: --			

Contents		Hrs
Unit - 1	**Transport Infrastructure** Characteristics of transport infrastructure, growth trends, investment need and budgetary support, existing financing pattern, financial recurrent expenditure.	9
Unit - 2	**Transport Costing and Recovery and Alternative Financing Mechanisms** Transport costing, pricing principles, cost recovery pricing, deficits; Financial capital investment, municipal development funds, capital market/debt financing, private sector participation, land as a resource, public private partnership, annuity based approach risk management.	12
Unit - 3	**Institutional and Regulatory Framework** Risk management, financing institute, fund providers, role and function, documentation and agreement, institutional and regulatory framework implementation.	12
Unit - 4	**Case studies** Highways and urban roads, Mass transport systems, passenger terminals (rail, bus, air), interchanges, depots, parking complexes, Logistics hubs, etc.	15

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Khan M.Y. and Jain, P.K.	Financial Management	4th Edition	Tata McGraw Hill
2.	Sarkar, P.K. and Maitri, V.	Theory and Applications of Transport Economics in Highway and Transport Planning	2010	Standard Publisher, Delhi
3.	Telliford, G.	Public – Private Transportation Partnerships around the World	2009	Nova Science Publishers

List of Exercises / Practicals:

1	Visit to State / Central Transport Ministry / Department and submit report.

List of Assignments/Tests:	
1	Test on Unit 1 or Unit 2.
2	Assignment on Unit 4.

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Transport Planning**			
Name of the Subject: **REGIONAL TRANSPORT PLANNING (ELECTIVE)**			
Subject Code: **TP.E.3.4**	Semester: **Third (Transport Planning)**		
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3	
Teaching Scheme	**Examination Scheme**		
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**		
Practical : **--**	Internal Assessment: **Marks 50**		
Aim: **To familiarize students with Regional Planning and Regional Transport Systems.**			
Objective:			
1.	**To give overview of Regional Planning and Regional Transport.**		
2.	**To study Regional Transport Policy and Regional Network Analysis.**		
Pre-Requisites: --			

Contents		Hrs
Unit - 1	**Overview of Regional Planning and Regional Transport Systems** Approach to regional planning, types of regions and their characteristics, delineation of region for transport planning; Regional transport system, types, characteristics, regional transport supply, regional traffic and travel pattern, emerging issues.	12
Unit - 2	**Regional Travel Demand** Regional travel demand determinant, regional demand models, regional accessibility, sequential travel demand models, econometric models, regional public transport demand.	12
Unit - 3	**Regional Network Analysis** Regional network system, rural road network planning, graph theory applications-connectivity and accessibility measures.	12
Unit - 4	**Regional Transport Policy** Regional transport infrastructure, system planning imperatives, integration aspects, system selection, policy aspects at regional level.	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Blonk, W.A.G.	Transport and Regional Development	1979	Saxon House.
2.	Vinod Kumar, T.M.	Micro Regional Transport Planning / Research		SPA, New Delhi

List of Exercises / Practicals:

1	Visit to Transport section / division of Regional Development Authority or NCRPB and submit Report.

List of Assignments/Tests:

1	Test on Unit 1 or Unit 2.
2	Assignment on Unit 4.

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Transport Planning**		
Name of the Subject: **PAVEMENT MATERIALS AND DESIGN (ELECTIVE)**		
Subject Code: **TP.E.3.5**	Semester: **Third (Transport Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To familiarize the students to Pavement Materials and Design.**

Objective:

1. **To give exposure to the students to various Materials and to study various Types of Pavements.**
2. **To study Structural and Functional Evaluation of Flexible Pavements.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Materials and Pavement Types** Material used for flexible bituminous and village roads, concrete roads, Material testing on sub grade soil, road aggregates, and bituminous materials and bituminous mixes; Low cost roads, stabilized soil roads, macadam roads, high types bituminous pavement method, design Portland cement and concrete pavement and base course vertical brick and block pavement.	9
Unit - 2	**Rigid Pavement** Stress in concrete pavement, stress to wheel loads, stress due to cyclic changes in temperature due to moisture content, combination of max tensile stress, thickness design method, tie bar, dowel bar and reinforcement in pavement.	12
Unit - 3	**Flexible Pavement Design** Different design methods, empirical and semi empirical and practical procedure, thickness design method.	12
Unit - 4	**Pavement Evaluation and Strengthening** Pavement evaluation- Structural and functional evaluation of flexible pavements, skid resistance, unevenness, roughness; Strengthening- Overlays, types of overlays, overlay design, Benkelman rebound deflection method of evaluating flexible pavements, Need for maintenance, pavement failure, maintenance of earth roads, gravel roads, WBM roads, bituminous surfaces and cement concrete surfaces, special problems of hill road maintenance, maintenance practice in India.	15

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Khanna, S.K. and Justo C.E.G.	Highway Engineering	7th Edition 1991	Nem Chands Brothers, Roorkee
2.	Ahuja, T.D.	Highway Engineering	1991	Standard Book House
3.	Singh, G.	Highway Engineering	4th Edition,	Standard Publishers Distributors, Nai Sarak,

			1999	Delhi.
List of Exercises / Practicals:				
1	Visit to various Types of Pavements and submit report.			
List of Assignments/Tests:				
1	Test on Unit 1 or Unit 2.			
2	Assignment on Unit 4.			

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Transport Planning**		
Name of the Subject: **TRANSPORT POLICY, LEGISLATION AND INSTITUTIONAL FRAMEWORK**		
Subject Code: **TP.C.4.1**	Semester: **Fourth (Transport Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To introduce the students to Transport Policy, Legislation and Institutional Framework.**

Objective:

1. **To introduce the students to Transport Policy and Institutional Framework.**
2. **To study Transport Legislations, Acts and Regulations.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	**Introduction** Basic concepts of policy, strategy and tactics, fundamentals of transport policy, theoretical and historical perspectives; principles of transport policy making at local, national and international level.	9
Unit - 2	**Transport Sector Policies** National transport policies in sectors of road sector, Road transport, railways, civil aviation, ports and shipping; financial outlays in transport sector; National urban transport policy (NUTP); urban bus service provision policies, MRTS policies, NMT policies, Logistics and freight sector policies; PPP in transport sector; International and national case studies on best practices in urban, regional and national transport policies.	12
Unit - 3	**Transport Legislations and Acts** Road Transport Corporation (RTC) Act, Motor Vehicle Act, National Highway Act; Legislations in Railways, Civil Aviation, Ports sector , Logistics sector, Multimodal Transport Act etc.	12
Unit - 4	**Institutional Frameworks** Institutional set ups in Roads, Road transport, Railways, Civil Aviation, Ports and Shipping, Metro Rail Corporations, State Road Transport Undertakings, City Bus Undertakings; Urban Transport set up in Municipal Authorities, local bodies etc; UMTA; Special Purpose Vehicles (SPV's), Role of NGO's etc; innovative methods in institutional strengthening, institutional audit and capacity building.	15

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	O'Flaherty, C.A.	Transport Planning and Traffic Engineering		An Imprint of Elseviers Butterworth – Heinemanm
2.	Ministry of Urban Development	National Urban Transport Policy	2006	Government of India

List of Exercises / Practicals:

1	Visit to Transport Department of Central and State Government and submit report.
List of Assignments/Tests:	
1	Test on Unit 1 or Unit 2.
2	Assignment on Unit 4.

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Transport Planning**		
Name of the Subject: **PROJECT FORMULATION AND APPRAISAL**		
Subject Code: **TP.C.4.2**	Semester: **Fourth (Transport Planning)**	
Duration: **48 Hours**	Maximum Marks: **100**	Credits: (3 + 0) = 3
Teaching Scheme	**Examination Scheme**	
Lecture : 3 hrs/week	End Semester Exam: **Marks 50**	
Practical : **--**	Internal Assessment: **Marks 50**	

Aim: **To study Project Formulation and Appraisal Techniques.**

Objective:

1. **To give exposure to the students to Project Formulation and Appraisal Techniques.**
2. **To give exposure to the student to Sensitivity Analysis Techniques.**

Pre-Requisites: --

Contents		Hrs
Unit - 1	• Life cycle of projects • Project Identification and Formulation • Project Monitoring and Evaluation	12
Unit - 2	• Project Appraisal Techniques • Financial Cost benefit analysis • Economic cost benefit analysis • Social cost benefit analysis	15
Unit - 3	• Computer application in Project Formulation • Sensitivity Analysis Techniques in Project Management	9
Unit - 4	• Appraisal Monitoring and Evaluation	12

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Nagarajan, K.	Project Management		New Age International Publishers
2.	Awani, A.O.	Project Management Technique		Petrocelli Books
3.	Choudhury, S.	Project Management		Tata McGraw – Hill Publishing Company Limited

List of Exercises / Practicals:

1	Visit to large scale project of Local Body / Development Authority and submit Appraisal of the Project.

List of Assignments/Tests:

1	Test on Unit 1 or Unit 2.
2	Assignment on Unit 4.

Name of the Course: **M. Planning / M. Tech (Planning) : Specialization in Transport Planning**		
Name of the Subject: **THESIS**		
Subject Code: **TP.C.4.3**	Semester: **Fourth (Transport Planning)**	
Duration: **384 Hours**	Maximum Marks: 8**00**	Credits: (0 + 16) = **16**
Teaching Scheme	**Examination Scheme**	
Lecture : **-- hrs/week**	End Semester Exam: **Marks 300**	
Practical : **24 hrs / week**	Internal Assessment: **Marks 500**	

Aim: **To undertake independent study in the field of Transport Planning.**

Objective:

1. **To develop a basic understanding of the area chosen for study (by carrying out a detailed literature review).**
2. **To undertake detailed exploration of the topic (by way of surveys and studies).**
3. **To identify issues and concerns those emerge out of the study and suggest Recommendations.**

Pre-Requisites: --

Contents	Hrs
All students are required to select a research topic of their choice in consultation with the faculty and carry out research for a case study based on primary and secondary data, analysis and data interpretation, identification of issues and potentials, conceptualization of plans, policies, proposals as per the scope of the research study and conclude with research findings along with recommendations. At the end of the research, the students are required to submit a thesis report and defend their research findings at an external examination with the aid of appropriate thesis drawings and report.	384

Text / Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Brubaker, D.L. and Thomas, R.M.	Thesis and Dissertations: A Guide to Planning, Research and Writing.	-	-
2.	Rowena Murray	How to Write a Thesis (3rd Edition)	-	Open University Press
3.	F. Abdul Rahim	Thesis Writing	2005	New Age International (P) Limited Publishers, New Delhi.
4.	Kastens, K. Pfirman, S., Stute, M., Abbott, D. and Scholz, C.	How to Write Your Thesis	-	Colombian University
5.	Bracken, I.	Urban Planning Methods, Research and Policy Analysis	2008	Routldge
6.	Wang, X., Von Hofpe, R.	Research Methods in Urban and Regional Planning	2007	Springer
7.	You Tube	Tools for Academic Research in Urban Design and Planning	2011	You Tube Video.

List of Exercises / Practicals:	
1	Field visit to Collect Data on selected Topic of Research.
List of Assignments/Tests:	
1	Marked Reviews at different Stages of completion of Research Work.
2	Internal and External Jury.