

School of Planning and Architecture, Bhopal

Syllabus of Transport Planning and Logistics Management

Department of Transport Planning

First Year : First Semester (Integrated Semester)					
Subject Code	Subject	WCH	ESE Format		Credits
MPLN0101	Integrated Planning Studio	12		VV	12
MPLN0102	Planning History and Theory	2	WR		2
MPLN0103	Built Environment	2	WR		2
MPLN0104	Economics & Sociology	2	WR		2
MPLN0105	Demography & Quantitative Methods	2	WR		2
MPLN0106	Infrastructure Planning	2	WR		2
MPLN0107	Planning Techniques	3	WR	VV	3
	Total	25			25

WCH- WEEKLY CONTACT HOURS ESE- END SEMESTER EXAMINATION VV- VIVA- VOCE WR-WRITTEN EXAM

FIRST YEAR : INTEGRATED SEMESTER						
Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Integrated Studio	MPLN1101	Lecture, Guided Practice and Group Exercise	Viva voce	9 + 3	12	Knowledge and Skill
Learning Objectives	Subject Contents		Learning Outcome			
<p>The objective of the studio is to inculcate the understanding of :</p> <ul style="list-style-type: none"> • general concepts associated with physical planning • documentation, data analysis, spatial representation, written and verbal communication • application of the theoretical inputs provided in other Subjects 	<p>Module 1: Literature Review Local Area Plans; Master Plans and Regional Plans; Standards Norms and Guidelines; Relevant Statutes</p> <p>Module 2: Analysis of Secondary Data Data Sources of Secondary Data for Social, Demographic, Economic and Spatial Analysis: Census (all series), NSSO, SECC etc.; Reports of National and International Organisations; Analysis of Secondary Data for the Study Area</p> <p>Module 3: Analysis of Primary Data Primary Surveys to Understand Socio-Economic and Demographic Profile Using Digital or Physical Survey Format and Questionnaire; Data Entry and Analysis of Primary Data Using Statistical and Analytical Tools</p> <p>Module 4: Visual Documentation and Representation Visual Documentation and Mapping of Activities; Land Use, Building Use, Building Height etc; Representation in the Form of Maps, Models or Any Innovative Methods</p> <p>Module 5: Formulation of Spatial Plans at Different Scales Preparation of Spatial Plans for Analysing Existing Situation and Proposing Planning Strategy for the Study Area(s)</p> <p>Module 6: Report Writing Writing Reports in Prescribed Format With Referencing and Appropriate Maps, Charts, Tables and Figures etc. for the Proposed Plan</p>		<p>Upon the completion, students would be able to:</p> <ul style="list-style-type: none"> • appreciate the Settlement Pattern • document, analyse and represent data spatially • engage in logical dialogues and discourses with all stakeholders for settlement planning • study and analyse an urban area in regional context • address issues at different scales in urban and rural context 			

FIRST YEAR : FIRST SEMESTER						
Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Planning History and Theory	MPLN 1102	Lecture, Self Study and Assignments	Written and Other Methods	2	2	Knowledge and Value
Learning Objectives	Subject Contents		Learning Outcome	Recommended Readings		
<p>The objective of the course is to inculcate the understanding of :</p> <ul style="list-style-type: none"> the processes that led to different settlement characteristics in early civilizations and during medieval times the evolution of civic planning thoughts and concepts since renaissance the evolution of planning theories and typology the various methods of participation and its relevance in planning the various theories of Urban and Regional Settlement Systems the contemporary approaches for urban development 	<p>Module 1: City in History Settlement Formation and Growth as a Response to Social, Economic, Religious, Political and Cultural Needs; Need for Civic Planning; Settlement Characteristics of Different Early Civilizations (Greek, Roman, Mesopotamian, Ancient India, Medieval Europe and India)</p> <p>Module2: Changing Thoughts Beyond Medieval Ages Impact of Renaissance and Industrial Revolution on City Form and Structure; Concepts of Utopia, Garden City, City Beautiful and Linear City</p> <p>Module 3: Theories and Approaches Understanding Theory; Paradigm Shifts in Planning Theory with Time and Context; Urban Planning in Response to Political Ideologies; Approaches in Planning - Advocacy Planning, Pluralism and Equity Planning etc.</p> <p>Module 4: Modern City Planning Thoughts Contributions to Modern City Planning Thoughts by Lewis Mumford, Patrick Geddes, Chadwick, Peter Hall, Jane Jacobs, Manuel Castells and Others</p> <p>Module 5: Theories of Urban & Regional Settlement Systems Concentric Zone Theory; Sector Theory; Multiple Nuclei Theory; Central Place Theory; Growth Poles and Centres; Gravity Model, Land Value and Other Contemporary Theories</p> <p>Module 6: Contemporary Planning Practices Globalisation and The New Economic Geography; Impact of IT; Global Cities; Impact of Global Negotiations/Inter Country Protocols; Contemporary Sustainable City Development Concepts; Smart City; Land Management Practices in India</p>		<p>Upon the completion, students would be able to:</p> <ul style="list-style-type: none"> explain changes in city forms over time and draw upon the lessons to form appropriate approaches in planning discourses explain the changes in planning thoughts and various theories in modern era as a response to changing contexts use models of equity planning, advocacy planning and participative planning while preparing city and community development plans engage in analysis of Urban and Regional Settlement Systems engage in discourses and apply various contemporary and upcoming concepts of city form and planning while preparing strategies and plans for developing city and region 	<ol style="list-style-type: none"> Readings in Planning Theory, Susan Fainstein and Scott Campbell, Blackwell Publishers, 2003 Urban Planning Theory Since 1945, Nigel Taylor, Sage, 2007 Planning Theory, Philip Allmendinger, Palgrave MacMillan, 2009 Urban Planning Theory and Practice, M. Pratap Rao, CBS Publisher & Distributors Pvt. Ltd., 2012 A Reader in Planning Theory, A. Faludi, Butterworth-Heinemann Ltd., 1973 Planning Theory for Practitioners, Michael P. Brooks, Planners Press, American Planning Association, 2002 Planning Theory: From the Political Debate to the Methodological Reconstruct, Archibugi Franco, Springer, 2008 Planning Theory, P. Healey, Pergamon Press The Information City, Manuaell cadtells, Blackwell Publishers, 1999 The Global City, Saskia Sassen, Princeton University Press, 1991 Contemporary Urban Planning, John M. Levy, Pearson, 2012 Cities of the World: World Regional Urban development, Brunn S.D.et al., Rowman & Littlefield Publishers, 2011 City Assembled: The Elements of Urban form through History, Kostof Spiro, Thames and Hudson, 2005 Contemporary Urban Planning, Levy John M, Longman, 2011 Cities of Tomorrow: An Intellectual History of Urban Planning and Design in the Twentieth Century, Hall Peter, 2014 Urban and Regional Planning Since Independence : Retrospect and Prospect : Technical papers, National Town and Country Planners Congress, Mysore, Ministry of Urban Affairs and Employment, 2012 The Oxford Handbook of Urban Planning, Weber Rachel et al., Oxford University Press, 2015 Urban Pattern: City Planning and Design, Gallion, Arthur B. and Eisner Simon, CBS Publishers, 1983 		

FIRST YEAR :INTEGRATED SEMESTER						
Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Housing and Environment	MPLN1103	Lectures / Tutorials	Written and Other Methods	2	2	Knowledge and Skill
Learning Objectives	Subject Contents		Learning Outcome	Recommended Readings		
<p>The objective of the course is to inculcate the understanding of :</p> <p>Housing:</p> <ul style="list-style-type: none"> a wide spectrum of aspects related to housing viz., housing situation, housing needs, housing typologies, housing legislations relevant methods for formulating housing strategies for a city basic issues of urban development relevant to housing sector in India <p>Environment:</p> <ul style="list-style-type: none"> environment and the interactions and inter-relationships of all living organisms with the physical surroundings environmental debates at national and international levels so as to find ways of integrating it in various stages of settlement planning 	<p>Housing:</p> <p>Module 1: Significance and Need of Housing Development</p> <p>Significance of Housing in National Development; Classification of Housing Typology; Housing Situation in India; Housing Need and Demand Assessment and Its Forecasting</p> <p>Module 2: Policy and Public intervention in Housing</p> <p>National Housing Policy; Changes in Approaches to Housing Interventions; Legal and Institutional Framework for Housing in India; Housing Strategy for a City - Housing Action Plan for a City</p> <p>Module 3: Segmentation of Housing Market</p> <p>Affordable Housing: Concept, Policy, Emerging Thoughts; Slums and Informal Housing; Informal Housing Typologies; Parameters and Approaches to Categorize Informal Housing for Interventions; Current Policies and Schemes for Improving Informal Housing; Real Estate Scenario; Relevant Case Studies of Different Categories of Housing</p> <p>Environment:</p> <p>Module 4 : Man and Environment</p> <p>Changing Perspectives in Man-Environment Relationship with Focus on Resource Depletion and Pollution; Eco-Systems and Their Relevance to Environment; Resources and Human Settlements; Ecosystem Services</p> <p>Module 5: Sustainable Development</p> <p>Sustainable Development; Urban Ecology; Urban Eco System Approach; Climate Change and Its Linkages with Human Settlements; Brief Introduction of Key Concepts of Climate Change</p> <p>Module 6: Tools and Techniques</p> <p>Overview of Procedures; Methods and Techniques to Conduct Environmental Impact Assessment (EIA); Strategic Environment Assessment; Integrative Natural Resource Planning at Different Levels</p>		<p>Upon the completion, students would be able to:</p> <p>Housing:</p> <ul style="list-style-type: none"> assess housing situation in India and its relation with overall development assess housing need and demand for any city with the help of basic statistics engage in discourses and critical analysis of housing policies develop strategy for housing for any given city as a planner <p>Environment:</p> <ul style="list-style-type: none"> comprehend the adverse impacts of social, cultural and economic activities carried out by human beings on environment analyse the existing conditions from the perspective of conserving natural resources for spatial planning exercises engage in discourses related to environmental issues 	<p>Housing:</p> <ol style="list-style-type: none"> Housing : Changing Needs and New Directions, V. Gandotra, M. Shukul, N. Jaju and N. Jaiswal, Authors press, 2009 Housing and Urbanisation- A study of India, Cedric Pugh, Sage Publications, New Delhi, 1990 Housing Laws in India- Problems and Remedies, P.K.Sarkar , Eastern Law House Private Ltd., 2000 National Housing Policy, GOI, New delhi, 1988 Reading Material on Housing, K. Thomas Poulouse, ITPI, India, 2002 Understanding Housing Policy, Brain Lund, The Policy Press, Great Britain, 2006 Holding Their Ground: Secure Land Tenure for the Urban Poor in Developing Countries, Durand-Lasserve, Royston L, Earthscan Publication, UK, 2002 Plotting, Squatting, Public Purpose and Politics, Land Market Development, Low Income Housing and Public Intervention in India, Baken, Robert Jan, King's SOAS Studies in Development Geography, 2003 <p>Environment:</p> <ol style="list-style-type: none"> Ecology and Equity - The Use and Abuse of Nature in Contemporary India, Gadgil, M. and Guha, R., Penguin,1995 Fundamentals of Ecology, Odum, E.P., Barrett, G.W., Brewer, R., Thomson Brooks, 2004 The ecology of urban habitats, O. L. Gilbert, Chapman & Hall, 1989 The Sustainable Urban Development Reader (Routledge Urban Reader Series) 3rd Edition by Stephen M.Wheeler (Editor), Timothy Beatley (Editor), 2014 Routledge Handbook of Ecosystem Services, Edited by Marion Potschin, Roy Haines-Young, Robert Fish, R. Kerry Turner, 2016 Methods of Environmental Impact Assessment / Edition 3 by Peter Morris, RikiTherivel, 2010 Spatial Planning and Climate Change, Elizabeth Wilson and Jake Piper, Routledge, 2010 		

FIRST YEAR : INTEGRATED SEMESTER						
Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Economics and Sociology	MPLN 1104	Lecture, Guided Practice and Group Exercise	Written and Other Methods	2	2	Knowledge and Skill
Learning Objectives	Subject Contents		Learning Outcome	Recommended Readings		
<p>The objective of the course is to inculcate the understanding of :</p> <p>Economics:</p> <ul style="list-style-type: none"> the relevance of Economics in Planning the concept of equilibrium in product market fundamental concepts in Urban Economics the application of Economics in Planning <p>Sociology:</p> <ul style="list-style-type: none"> the genesis of urban sociology the role of urbanization in social alienation urban enclaves, ghettos and gentrification different parameters of an inclusive city 	<p>Economics:</p> <p>Module 1: Economics in Planning</p> <p>Importance of Economics in Planning; Twin Themes of Economics – Scarcity and Efficiency; Laws of Demand and Supply; Equilibrium in the Market</p> <p>Module 2: Fundamental Concepts in Economics</p> <p>Elasticity of Demand; Cost Curves; Breakeven Point; Product Pricing; Economic Growth and Economic Development; Human Development Index (Definition and Indicators); Economics of Agglomeration; Basic Axioms of Urban Economics</p> <p>Module 3: Application of Economic Tools in Planning</p> <p>Application of Economic Tools in the Estimation of Demand, Price, Cost of Urban Services and Amenities</p> <p>Sociology:</p> <p>Module 4: Sociology and Urbanisation</p> <p>Industrial Revolution and the Birth of Urban Sociology; Socio-Economic and Cultural Processes of Urbanization and its Effects on Social Alienation; Class Formation and the Production or Destruction of Collective and Individual Identities (Sanskritisation and Brahminisation)</p> <p>Module 5: Human Ecology and Urbanism</p> <p>Human Ecology; Urbanism; The Chicago School and Urban Sociology; Elitism and Power of Place; Urban Enclaves and Ghettos; Fear and Disorder; Gentrification; Integration and Segregation; Race and Ethnicity</p> <p>Module 6: Sociology of Globalised and Inclusive Cities</p> <p>Inclusive Cities: Definition; Elements of Inclusivity; Sociology of Gender; Urban Crime; Sociological Impact of Globalisation</p>		<p>Upon the completion, students would be able to:</p> <p>Economics:</p> <ul style="list-style-type: none"> find equilibrium level of output / services numerically and diagrammatically derive breakeven level of output measure elasticity of demand calculate / measure demand and price of different urban services apply tools of Economics in Planning <p>Sociology:</p> <ul style="list-style-type: none"> relate the different underlying processes in urbanization appreciate the ramifications of class formation list the imperatives of gentrification list the imperatives of an inclusive city list the sociological imperatives in the planning of a globalised city 	<p>Economics:</p> <ol style="list-style-type: none"> Economics, Paul A. Samuelson et all, Tata Mc Graw Hill Publication, 2011 Micro Economics, Dominick Salvatore, Schaum's Outline Series, Mc Graw Hill, 1986 Micro Economics, Anindya Sen, Oxford University Press, 2006 Economics – An Analytical Introduction, Amos Witztum, Oxford University Press, 2005 General Economics, Deepashree, Tata Mc Graw Hill Publication, 2014 Day to Day Economics, Satish Y Deodhar, IIM, Ahmedabad, 2012 <p>Sociology:</p> <ol style="list-style-type: none"> Sociology, Anthony Giddens, Wiley, 1986 Urban Sociology : Images and Structure, Flanagan, William G., Prentice Hall, 1980 The Oxford Companion to Sociology and Social Anthropology, Das Veena, Vol. I and II, OUP, New Delhi, 2003 Social Change in Modern India, Srinivas M. N., Oxford University Press, Delhi, 1963 A Subaltern Studies Reader, Guha R., Oxford University Press, New Delhi, 1986-1995 The Sage Handbook of Sociology, Bryn Turner et all, Sage, 2005 		

FIRST YEAR : INTEGRATED SEMESTER						
Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Demography and Quantitative Methods	MPLN 1105	Lecture, Guided Practice and Group Exercise	Written and Other Methods	2	2	Knowledge and Skill
Learning Objectives	Subject Contents		Learning Outcome	Recommended Readings		
<p>The objective of the course is to inculcate the understanding of :</p> <p>Demography:</p> <ul style="list-style-type: none"> sources of demographic data different aspects of population composition and distribution various methods of population projection different aspects of migration <p>Quantitative Methods:</p> <ul style="list-style-type: none"> the importance of Statistics in Planning the cardinal principles in tabulation and diagrammatic representation of data the measure of dependency between variables the measure of causal relationship between variables different types of sampling 	<p>Demography:</p> <p>Module 1: Introduction to Demography</p> <p>Demography: Definition and Determinants; Sources of Demographic Data: Civil Registration Method, Census, Sample Surveys</p> <p>Module 2: Population Composition and Distribution</p> <p>Age Sex Pyramid; Rural-Urban Divide; Population Composition by Education and Occupation (LFPR, WFPR); Migration: Different Variants</p> <p>Module 3: Population Projection</p> <p>Different Methods of Population Projection: Geometric and Exponential Projection, Cohort – Component Method, Extrapolation and Interpolation, UN Method</p> <p>Quantitative Methods:</p> <p>Module 4: Descriptive Statistics</p> <p>Relevance of Statistics in Planning; Tabulation and Diagrammatic Representation of Data; Measures of Central Tendency and Dispersion</p> <p>Module 5: Inferential Statistics (I)</p> <p>Dependency and Causal Relationship Amongst Variables: Measures of Correlation and Regression</p> <p>Module 6: Inferential Statistics (II)</p> <p>Sampling: Definition and Types; Calculation of Sample Size</p>		<p>Upon the completion, students would be able to:</p> <p>Demography:</p> <ul style="list-style-type: none"> read Census of India Tables and NSSO Data prepare age-sex pyramid and calculate LFPR / WFPR project population calculate different parameters of demography <p>Quantitative Methods:</p> <ul style="list-style-type: none"> tabulate data represent data diagrammatically find the dependency coefficient between variables find the causal relationship between variables determine the appropriate methods of sampling determine the sample size 	<p>Demography:</p> <ol style="list-style-type: none"> Demography, Peter R. Cox, Cambridge University Press, 1976 Studies in Demography, S.C. Srivastava et al, Anmol Publishers 2004 Introduction to Applied Demography: Data Sources and Estimation Technique, William J Seraw, Sage Publishers 1984 Geography of Population – Concepts, Determinants and Pattern, R.C. Chandna, Kalyan Publishers, Ludhiana, 1996 India's Population Problems, S.N. Agarwal, Tata McGraw Hill Co., Bombay 1972 Principles of Demography, D.J. Bogue, John Wiley, New York 1969 <p>Quantitative Methods:</p> <ol style="list-style-type: none"> Statistics for Management, Richard I. Levin et al, Pearson 2011 Econometrics, Damodar Gujarati, Tata Mc Graw Hill 2007 Quantitative Methods: Theory and Applications, J.K. Sharma, Macmillan 2010 Quantitative Techniques in Geography – An Introduction, Robert Hammond et al, Oxford University Press 1975 Applied Statistics, P.K. Majumdar, Rawat Publications 2010 Statistical Techniques for Data Analysis, John K. Taylor and Cheryl Cihon, Chapman and Hall / CRC, 2004 		

FIRST YEAR : INTEGRATED SEMESTER						
Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Infrastructure Planning	MPLN-1106	Lecture / Tutorials	Written and Other Methods	2	2	Knowledge and Skill
Learning Objectives	Subject Contents		Learning Outcome	Recommended Readings		
<p>The objective of the course is to inculcate the understanding of:</p> <ul style="list-style-type: none"> design principles of physical infrastructure (utilities and services) in urban context and Indian norms and standards existing practices and latest innovations the importance of public health in urban planning the various aspects of urban sanitation practices, urban sewer network and storm water drainage managing municipal solid waste different types of intersections the techniques of junction improvement and street design elements the street pattern and urban form land use and transport integration the various approaches to parking the factors behind trip generation, distribution and assignment the principles of transit oriented development 	<p>Module 1: Introduction to Infrastructure Planning</p> <p>Urban Infrastructure: Definition, Attributes, Character and Types; Status of Urban Infrastructure in India and Its Impact on Socio-Economic Development; Role of Planner in Urban Infrastructure Planning; Familiarization with CPHEEO Manuals, IRC Codes and Other Standard Guidelines</p> <p>Module 2: Urban Water Supply Systems and Other Support Services</p> <p>Surface and Ground Water Sources; Quality and Quantity Requirements; Water Demand; Treatment, Conveyance and Distribution of Water Supply Systems; Supply Methods and Networks; Institutional Framework and Water Tariff Systems; Case Study Discussion on Best Practices; An Overview of Telecommunication, Electricity and Fire Emergency Services</p> <p>Module 3: Urban Sanitation System</p> <p>Sewerage System: Quality and Quantity of Sewage; Network Based and Non-Network Based Sewerage Systems; Faecal Sludge Management; Storm Water Drainage System: Generation, Measurement and Networks; Self-Cleansing Velocity and Non-Scouring Velocity; Solid Waste Management System: Classification and Characteristics of Solid Wastes; Stages of SWM System; Source Reduction; Case Study Discussion on Best Practices</p> <p>Module 4: Basics of Transport Planning</p> <p>Accessibility and Mobility; Types of Traffic and Transportation Plans; Institutional and Legal Framework; Classification of Urban and Regional Roads; Road Geometries, Intersections, Rotaries, Signals and Street Infrastructure; Study Area Delineation and Traffic Analysis Zones; Traffic Survey Techniques</p> <p>Module 5: Transport Policies and Landuse -Transport Integration</p> <p>Traffic Demand Study and Traffic Management Techniques; Transport Theories and Policies; Public Transport Systems; Landuse and Transport Integration; Four Stage Modelling; Transit Oriented Development</p> <p>Module 6: Parking, NMT and Pedestrian Infrastructure</p> <p>Types of Parking and Current Challenges; Parking Standards and Innovative Practices; Non-Motorized Transport: Classification, Need, Design Standards; Pedestrian Infrastructure: Challenges and Remedies</p>		<p>Upon the completion, students would be able to:</p> <ul style="list-style-type: none"> plan for water supply based on existing norms and standards prescribe the normative sanitation option appreciate the relative advantages/disadvantages of various sewage disposal options plan for integrated municipal solid waste management plan for integrating road networks with urban traffic apply the junction improvement techniques list the traffic calming measures map accessibility and trip generation and distribution measure the LoS, PCU and volume count carry out origin destination survey / parking surveys 	<ol style="list-style-type: none"> Water Supply Engineering, S. K. Garg, Khanna Publishers 2010 CPHEEO Manuals on Water Supply, Sewerage, Solid Waste Management Systems, 1999, 2005, 2013 Urban Planning Manual, AIILGS Reader 2009 Environmental Engineering, Howard S. Peavy, Tata Mc Grawhill 2013 Regulation and the Management of Public Utilities, C. S. Morgan, Gale Water Supply Engineering: Environmental Engineering – I, Arun Kumar Jain, Ashok Kumar Jain, B. C. Punmia, Laxmi Publications 1995 Solid Waste Management, Krishana Gopi Sanoop P, Sasikumar K, Phi Learning 2009 Solid Waste Management, Dewan, Sudarshan, Discovery Publishing House Telecommunication Management Networks (TMN) Implementation, Amani Omer, Lambert Academic Publishers Firefighting: Management and Techniques, Overton Frank, Inkata IRC Codes, UTTIPEC and ITDP Guidelines 1986, 2005, 2005 Traffic Engineering and Transport Planning, L.R. Kadiyali, Khanna Publications 1987 Transportation Engineering and Planning, Author: C. S Papacostas, P. D Prevedouros, Publisher: PHI Learning 2000 Principles of Urban Transport Systems Planning, B. G. Hutchinson, McGraw Hill 1974 Urban Transport: Planning and Management, A. K. Jain, APH Publishing 2009 		

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Planning Techniques	MPLN1107	Lecture, Guided Practice, Group Exercise	Written and Viva-Voce	3	3	Knowledge and Skill
Learning Objectives	Subject Contents		Learning Outcome	Recommended Readings		
<p>The objective of the course is to inculcate the understanding of:</p> <ul style="list-style-type: none"> the data sets required for undertaking studies for different types and levels of planning the salient features of different types of data collection techniques methods of analyzing trend of various spatial and non spatial variables various plan preparation & implementation techniques use computer applications for data analysis understanding of remote sensing, GIS & geospatial data 	<p>Module 1: Preparation of Map</p> <p>Basic Terminology; Base Map Preparation: Representation of Spatial Data; Choice of Appropriate Scales; Notations - Basic Disciplines of Maps</p> <p>Module 2: Data Collection and Analysis Techniques (Quantitative)</p> <p>Different Types of Surveys: Land Use, Socio-Economic, Building Use, Density etc; Formulation of Spatial Standards; Computer Applications for Data Collection and Analysis</p> <p>Module 3: Data Collection and Analysis Techniques (Qualitative)</p> <p>Methods of Collecting Qualitative Data – Interviews, Focus Group Discussions, etc.; Approaches to Analyze Qualitative Data - Delphi Method, Likert Scale, etc.; Case Studies for Qualitative Data Analysis</p> <p>Module 4: Methods of Plan Preparation</p> <p>Contents of a Master Plan, Regional Plan, etc.; Methodologies of Plan Preparation and Implementation Techniques; Plan Implementation and Public Participation</p> <p>Module 5: Geospatial Data Processing</p> <p>Types of Platforms: Space, Air and Ground Borne and Their Characteristics; Spectral Signature; Raster Data Processing and Analysis; Techniques of Image Interpretation; Resolutions; Geo-Rectification; Geometric Distortions, Image Enhancement; Data Creation: Thematic Model, Vector Data Features; Digitization</p> <p>Module 6: Geospatial Analysis</p> <p>Non-Spatial Data Creation and Its Integration; Data Query; Analysis: Buffers, Overlay, Proximity, Network Analysis; 3D Terrain Modelling; Data Presentation</p>		<p>Upon the completion, students would be able to:</p> <ul style="list-style-type: none"> design questionnaire conduct surveys of various types calculate trend of different spatial and non spatial indicators interpret land use classification and coding analyze qualitative and quantitative data scale and standardize spatial data interpret remote sensing data and use GIS 	<ol style="list-style-type: none"> Urbanisation and Urban Systems in India, Ramchandran R. Oxford University Press 2010 Cities Urbanisation and Urban Systems, Siddhartha K. and Mukherjee S., Kisalaya Publications 2003 An Introduction to Regional Planning, Glasson J., UCL Press, London 1995 Economic and Social Geography Made Simple, Knowles R. and Wareing J., Rupa and Company 1990 Concepts and Techniques of Geographic Information Systems, Lo C.P. and Yeung A.K.W., PHI Learning Private Limited 2006 Planning Techniques for AITP, Reader on Institute of Town Planners India URDPFI Guidelines Volume 1, Ministry of Urban Development, Govt. of India, New Delhi 2014 Remote Sensing and Image Interpretation, Thomas M. Lillesand et al, John Wiley and Sons Ltd. 1987 Remote Sensing and GIS, Basdudeb Bhatta, Oxford University Press 2008 Spatial Analysis, Mark R. T. Dale, Marie-Josée Fortin, Cambridge University Press 2005 		

First Year : Second Semester (TPLM)						
Subject Code	Subject	WCH		ESE Format		Credits
		L	P			
MPTP 0201	Transportation Planning Studio-II and Lab	0	9		VV	9
MPTP 0202	Urban and Public Transport Planning	4	0	WR		4
MPTP 0203	Traffic Engineering	3	0	WR		3
MPTP 0204	Intelligent Transport System (ITS)	3	0	WR		3
MPTP 0205	Transport Economics	3	0	WR		3
MPTP 0206	Seminar and Technical Report Writing	0	3		VV	3
	Total	13	12			25

WCH- WEEKLY CONTACT HOURS ESE- END SEMESTER EXAMINATION VV- VIVA- VOCE WR-WRITTEN EXAM

FIRST YEAR : INTEGRATED SEMESTER						
Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Transportation Planning Studio-II and Lab	MPTP 0201	Theory and Practical	Viva voce	9 + 3	12	Knowledge and Skill
Learning Objectives	Subject Contents		Learning Outcome			
<p>The objective of the Studio is to inculcate the understanding of:</p> <ul style="list-style-type: none"> documentation, data analysis, spatial representation, written and verbal communication the preparation of mobility plan for improving accessibility various stages of transport modeling and selection of suitable scenario 	<p>Module 1: Literature Review</p> <p>Review of Master Plans and Regional Plans; Mobility Plans; National Urban Transport Policy; Traffic and Transportation Planning: Standards , Norms, Codes and Guidelines</p> <p>Module 2: Analysis of Secondary Data and Delineation of TAZs</p> <p>Formulation of Questionnaires for Different Types of Users; Collection of Secondary Data on Socio-Economic and Spatial Aspects; Assessment of Employment Characteristics; Existing Public and Para Transport Infrastructure; Base Map; Road Inventory and Network Mapping; Delineation of TAZs; Different Types of Surveys: Household, Passenger, Pedestrian, OD and Parking; Preparation of Formats for Volume Count, Parking, Pedestrian Movement</p> <p>Module 3: Collation and Analysis of Primary Data</p> <p>Conducting of Primary Surveys; Collection, Compilation and Consolidation of Primary Data; Analysis of Primary Data Using Statistical and Spatial Analytical Tools</p> <p>Module 4: Four Stage Modelling and Adoption of Suitable Scenario</p> <p>Trip Generation / Trip Distribution / Modal Split / Trip Assignment Modelling and Scenario Analysis Using Transport Planning Software</p> <p>Module 5: Preparation of Proposals and Reporting</p> <p>Preparation of Proposal for Improvement of Accessibility; Public Transport; Low Carbon Mobility; Improvement of Network Efficiency; Land Use - Transport Network Integration; Street Redesign; Parking Management Plan</p>		<p>Upon the completion, students would be able to:</p> <ul style="list-style-type: none"> analyze various factors affecting trip making document and analyse travel behavior data conduct four stage modeling using software create and evaluate scenario for making suitable proposals towards improved accessibility 		<ol style="list-style-type: none"> Modelling Transport, Juan de Dios Ortúzar, Luis G. Willumsen, 4th Edition , Wiley Publishers 2011 Urban Transit : Operations, Planning and Economics, Vukan R. Vuchic, Wiley Publishers (2005) 	

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Urban and Public Transport Planning	MPTP0202	Lecture and Assignments	Written	4	4	Knowledge and Skill
Learning Objectives	Subject Contents		Learning Outcome	Recommended Readings		
<p>The objective of the course is to inculcate the understanding of:</p> <ul style="list-style-type: none"> To ensure that students are able to apply the underlying operating and economic principles in order to develop solutions to various PT problems such as forecasting, scheduling, network design and project evaluation. To ensure that students understand the multi-dimensional role of public transport within a multi-modal transport planning system 	<p>Module 1: Overview of Transport - Land Use Integration Principles of Compact City; Transit Oriented Development; Land Use Planning as a Public Transport Demand Management Strategy; Transport Hubs; Land Use - Transport Integration</p> <p>Module 2: Transport Surveys and Studies Network and Zoning Systems; Traffic Surveys: Revealed and Stated Preference; Survey Techniques: Primary and Secondary Data Collection, Sampling; Modelling and Decision Making; Aggregate and Disaggregate Modeling; Introduction to 4-Stage Modelling Process</p> <p>Module 3: Travel Demand Forecasting Forecasting Travel Demand: Different Techniques; Trip Generation: Cross Classification, Multiple Regression, Trip Rate Analysis etc; Trip Distribution: Fratar Method, Gravity Model etc; Mode Choice Analysis: Econometric Models; Trip Assignment: Minimum Path Technique, Capacity Restraint etc.; Software Applications</p> <p>Module 4: Public Transport Role of Public Transportation in Urban Development; Transit System Planning and Mode Selection; Public Transport Network Design and Operation; Multimodal Hubs, Terminals and Depots</p> <p>Module 5: Sustainable Transport ASI Model; Travel Behaviour and 5-D Framework; Planning for NMT; Shared Mobility; Green Transportation: Issues, Policies and Case Studies</p>		<p>Upon the completion, students would be able to:</p> <ul style="list-style-type: none"> Understanding of the key issues affecting the demand, cost, planning and management of public transport Planning the scheduling of public transport operations, demand forecasting, cost modelling, pricing policies and principles behind regulation and privatisation 	<ol style="list-style-type: none"> Modelling Transport (2011), Juan De Dios Ortuzar, Luis G. Willumsen, Publisher: John Wiley & Sons Integrated Land Use and Transport Modelling, Author: Tomas De La Barra, Publisher: Cambridge University Press. Location, Transport and Land-Use: Modelling Spatial-Temporal Information, by Yupo Chan, Publisher: Springer The Economics of Transport: A Theoretical and Applied Perspective, Jonathan Cowie, Routledge Transportation Engineering and Planning, C. S Papacostas, P. D Prevedouros PHI Learning Transportation Engineering: An Introduction, C. Jotin Khisty, B. Kent Lall Phi Learning Urban Transit : Operations, Planning and Economics Vukan R. Vuchic, Wiley publishers (2005) Urban Transit Systems and Technology, Vukan R. Vuchic Wley publishers (2007) Urban Transportation Systems, Sigurd Grava, McGraw-Hill Education (2002) 		

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Number of Credits	Learning Domain
Traffic Engineering	MPTP 0203	Lecture	Written	3	3	Knowledge and Skill
Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings			
<p>The objective of the course is to inculcate understanding of :</p> <ul style="list-style-type: none"> • Various traffic stream characteristics • Methods for measurement of traffic at various locations • Methods for controlling traffic at an intersection • Designing a traffic signal 	<p>Module 1: Traffic Stream Characteristics</p> <p>Introduction to Traffic Engineering; Understanding the Nature of Traffic Flow; Traffic Flow: Parameters and Categories; Analysis of Speed, Flow and Density Relationship; Traffic Flow Theories and Applications; Shock Waves; Queuing Theory and Applications</p> <p>Module 2: Traffic Measurement Procedures</p> <p>Measurement at a Point / Short Section / Length of Road; Automated Traffic Measurement; Level of Service: Estimation and Analysis</p> <p>Module 3: Traffic Intersection Control</p> <p>Principles of Traffic Control; Traffic Signs and Road Markings; Uncontrolled Intersection; Channelization; Traffic Rotary; Grade Separated Intersection</p> <p>Module 4: Traffic Signal Design</p> <p>Elements of Traffic Signal; Design Principles of Traffic Signal; Evaluation of Traffic Signal; LOS Analysis of a Signalized Intersections; Coordinated Traffic Signal; Vehicle Actuated Signals and Area Traffic Control</p> <p>Module 5: Accident Analysis</p> <p>Analysis of Individual Accidents; Methods of Representing Accident Rate; Factors of Traffic Accidents; Influence of Roadway and Traffic Conditions on Traffic Safety; Identification of Hazardous Location: Frequency Method, Accident Rate Method, Frequency-Rate Method, Rate Quality Control Method, Spatial Auto- correlation, etc.</p>	<p>Upon the completion, students would be able to :</p> <ul style="list-style-type: none"> • Critically analyze the intricacies involved in the management of mobility in an urban area • Formulate strategies for easing traffic congestion • Estimate the capacities of roadways and intersections and the prevailing level of service 	<ol style="list-style-type: none"> 1. Roess, RP., McShane, WR. and Prassas,ES, Traffic Engineering,Prentice Hall. 2. May, A. D., Fundamentals of Traffic Flow, Prentice Hall. 3. Papacostas, C.S., Fundamentals of Transportation Engineering, Prentice Hall. 4. Kadiyali, LR, Traffic Engineering and Transportation Planning, Khanna Publishers 5. Highway Capacity Manual, Transportation Research Board, USA. 6. Khanna, S.K. and Justo, C.E.G., Highway Engineering, Nemchand Publishers. 7. Pingnataro, G. J., Principles of Traffic Engineering, Mc Graw - Hill. 8. William, R. McShane and Roger, P. Roess, Traffic Engineering, Prentice hall, New Jersey. 9. Pignataro, Louis; Traffic Engineering - Theory and Practice, John Wiley 10. Drew, D.R., Traffic Flow Theory and Control, McGraw Hill Book Co. 			

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credit	Learning Domain
Intelligent Transportation System (PD)	MPTP 0204 Elective	Lecture and Assignments	Written	3	3	Knowledge and Skill
Learning Objectives	Subject Contents		Learning Outcome	Recommended Readings		
<p>The objective of the course is to inculcate understanding of :</p> <ul style="list-style-type: none"> the technological and functional requirements of ITS different applications of ITS data analytic techniques in the context of ITS (overview) the problem solving skills in relation to ITS applications 	<p>Module 1: Introduction to ITS</p> <p>Functioning and Utility of ITS; Historical Background of ITS Development; Technology Building Blocks: Data Acquisition, Communication Tools, Data Analysis, Passenger Information; Detection, Identification and Collection Methods: Roadway Sensors, Environmental Sensors, Probe-Based Sensors, Bluetooth, RFID, Mobile Reports, Real Time Traffic Monitoring Using Cellular Network and GPS Probe, Smart Cards; ITS Architecture: Functionalities Required for User Service, Logical and Physical Architecture, Equipment and Service Packages, ITS Architecture of US, Europe And Japan; ITS and Data Analytics</p> <p>Module 2: Applications of ITS</p> <p>Advance Traffic Management System (ATMS); Advance Traveller Information System (ATIS); Advance Vehicle Control System (AVCS); Advance Public Transport System (APTS), Commercial Vehicle Operation (CVO); ITS for Logistics; ITS Solutions for Smart Cities: Multi-Modal Transportation and Traveller Information System; Shared Mobility; Mobility as a Service (MAAS); Demand Responsive Transport (DRT); Smart Ticketing and Mobile Payments; E-Mobility; Freight Solutions; Smart Parking; Congestion Charging; Autonomous and Connected Vehicles; Artificial Intelligence for Smart Mobility</p> <p>Module 3: Introduction to Data Analytics for ITS</p> <p>Data Analytics in Context of ITS: Descriptive, Diagnostic, Predictive, and Prescriptive Aspects of Data Analytics; Evolution of Data Analytics Solutions: SQL Analytics, Visual Analytics, Big Data Analytics and Cognitive Analytics; Available Open Source Data; Analytics Tools And Resources; Introduction to Highway Traffic Safety Data Analysis: Crash Count / Frequency Modelling; Safety Effectiveness Evaluation; Economic Appraisal; Hot Spot Analysis and Injury Severity Modelling; Introduction to Descriptive and Predictive Data Analytics Techniques in ITS Applications in Intermodal Freight Transportation; Application of Social Media in ITS Applications</p> <p>Module 4: Solution Development for ITS Applications</p> <p>Introduction to Optimization Techniques for ITS Applications; Python Scripting Basics; Introduction to Vehicle Route Planning with Time Windows (VRPTW); Introduction to Dial-A-Ride- Problem (DARP); Using Codes for Solving VRPTW / DARP Problems; Introduction to Agent Based Modelling; Basics of SUMO VR / Matsim, Simulation Exercise</p>		<p>Upon the completion, students would be able to :</p> <ul style="list-style-type: none"> identify components required for functioning of ITS visualize the process flow of ITS applications establish the link between data analytics and ITS run code for solving small optimization problems related to ITS applications undertake basic simulation exercises 	<ol style="list-style-type: none"> Intelligent Transport Systems, by P. K. Sarkar and A.K. Jain, PHI Learning Pvt. Ltd., 2018 Data Analytics for Intelligent Transportation Systems, by Mashrur Chowdhury, Amy Apon, Kakon Dey, Elsevier, 2017 Google OR tools (https://developers.google.com/optimization/routing/) 		

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Transport Economics	MPTP 0205	Lecture and Assignments	Written	3	3	Knowledge
Learning Objectives	Subject Contents		Learning Outcome	Recommended Readings		
<p>To impart necessary knowledge and skills to enable students:</p> <ul style="list-style-type: none"> • Appreciate the relevance of economics in transport • Understand the demand for and supply of transport services • Explain the various tools of transport demand forecasting • Examine the dynamics of costs of transportation • Recognize the interrelationship between trade, technology and transport 	<p>Unit 1: Transport Economics: Definition and Relevance</p> <p>Economics and its relevance to transport; Problem of Scarcity; Production possibility frontiers; Transport market : Structure and Functions; Transport and economic development: supply side and demand side arguments; Role of passenger and freight transport: decoupling freight and passenger traffic from GDP; Efficient production of transport services</p> <p>Unit 2: Transport Demand and Supply</p> <p>Economics of demand for and supply of transport services; Transport demand : the determinants; Weighted demand curves; Concept of primary demand, derived demand and effective demand; Freight and passenger demand; Elasticity of demand for transport : price, income and cross elasticity</p> <p>Unit 3: Forecasting of Transport Demand</p> <p>Transport demand forecasting: qualitative and. quantitative methods, Time series analysis (trend, seasonal and cyclical variations); Econometric methods: OLS method, Logit and Probit models</p> <p>Unit 4: Costs of Transportation</p> <p>Cost economies: vehicle size (square-cube law); Fleet size (truckload and less than truckload); Distance and weight; Infrastructure and traffic density; Network efficiency; Cost relationships: problems of traceability and separability (joint, common and constant costs)</p> <p>Unit 5: Trade, Technology and Transport</p> <p>Transportation and technology change; Time line of technology advances in transportation and communications; Technology innovations and transportation costs; Trade and transportation costs: Absolute vs. Relative Advantage; Terms of Trade, Trade with zero transportation cost and real transportation costs; Law of one Price</p>		<p>Upon the completion, students would be able to:</p> <ul style="list-style-type: none"> • Draw the production possibility frontiers • List the supply and demand side factors of transport that impact economic development • Draw the weighted transport demand curves • Calculate price, income and cross elasticity of transport demand • Forecast transport demand using econometric tools • Work out the costs of transportation • Work out terms of trade 	<p>Books</p> <ul style="list-style-type: none"> • Button, K (1993).Transport Economics. Cheltenham, UK: Edward Elgar • Cole, S. (2004). Applied Transport Economics, London, Kogan Page • Cowie, J. (2010), The Economics of Transport, Routledge • Prentice, B.E. and Prokop, D.(2015), World Scientific • Bamford, C. and Grant, S. (2006) Transport Economics 4th Edition Heinemann Educational Publishers • Mallard, G. and Glaister, S. (2008), Transport Economics: Theory, Application and Policy, Palgrave MacMillan • Spurling, D.J., (2010), Introduction to Transport Economics: Demand, Cost, Pricing, and Adoption, Universal Publishers <p>Journals</p> <ul style="list-style-type: none"> • Research in Transportation Economics, Elsevier • International Journal of Transport Economics, Libraweb • Journal of Transport, Economics and Policy, University of Bath 		

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Seminar	MPTP 0206	Lecture, Guided practice, Practical	Viva voce	3	3	Knowledge, Research skills
Learning Objectives	Subject Contents		Learning Outcome			
<p>The objective of the course is to:</p> <ul style="list-style-type: none"> Initiate the process of literature review related to frontiers of research in Transport Planning and Logistics Management in Spatial context. To explore various methods of conducting research Acquire report writing skills 	<p>Module 1: Identification of a Research Domain Identification of topic of interest having relevance to planning profession, Preparation of alternative seminar proposal abstracts.</p> <p>Module 2: Literature Review Review of books and journal articles and compilation of the same to establish the body of work existing in the selected area of work Documentation of multiple view points and colloquial arguments.</p> <p>Module 3: Identification of Challenges and opportunities Establish the different arguments and outcome of other research works in the selected area of work, identify the research gaps for taking a new stance resulting in a literature review document/ position paper.</p> <p>Module 4: Research Design Defining and formulating the research problem, Framing an appropriate Research Design, Collection of data and opinions of stakeholders on the topic selected (if not a descriptive design)</p> <p>Module 5: Report writing and Poster for paper Report writing in prescribed format with referencing and appropriate maps, charts, tables and figures etc in the form of a working paper/position paper/ review paper on the selected topic. Preparation of a Poster for presentation (similar as a conference poster)</p>		<p>Upon the completion, students would be able to:</p> <p>Seek out literature on a research topic from various online and printed academic/research databases</p> <p>Engage in logical dialogues and discourses based on past research</p> <p>Articulate responses to various authors, books and papers and move from argument to argument in a succinct and logical way</p> <p>Write and present a seminar paper that describes literature review, research design adopted and highlight new arguments/ original minor research</p>			

Second Year : Third Semester (TPLM)						
Subject Code	Subject	WCH		ESE Format		Credits
		L	P			
MPTP 0301	Transportation Planning Studio-III (Transport oriented/ Logistics oriented)	0	9		VV	9
MPTP 0302	<u>Elective Open Common Pool</u> A. Transport & Urban Development B. Equity and Mobility Planning	3		WR		3
MPTP 0303	<u>Elective I</u> A. Port Planning and Management B. Airport Planning and Management C. Railways Planning and Management	3		WR		3
MPTP 0304	Project Planning, Appraisal and Management	3		WR		3
MPTP 0305	Logistics and Freight Management	3		WR		3
MPTP 0306	Pre-Thesis Research Design	0	4	WR		4
MPTP 0307	Professional Training (Optional)	0	0		VV	0
	Total	12	13			25

WCH- WEEKLY CONTACT HOURS ESE- END SEMESTER EXAMINATION VV- VIVA- VOCE WR-WRITTEN EXAM

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Transportation Planning and Logistics Studio-II	MPTP 0301	Theory and Practical	Viva voce	9	9	Knowledge and Skill
Learning Objectives	Subject Contents		Learning Outcome			
<p>The objective of the course is to impart necessary knowledge and skills to enable students:</p> <ul style="list-style-type: none"> • synthesize knowledge and skills obtained in the core courses in planning in order to prepare a plan for Logistics & Freight Management • get involved in a practicum to understand the association amongst land, demography, environment, economy and equity etc. • formulate alternatives planning interventions 	<p>Module 1: Understanding Logistics and Freight Management Freight Movement Through Different Modes; Importance of Cargo Stations in the City; Typology of Goods; Freight Policies and Statutes</p> <p>Module 2: Reviewing Logistics Management Practices Trade and Its Impact on Logistics and Freight Transport Industry; Institutional Mechanism for Cargo Handling; Challenges in Logistics Eco System; Logistics Management: PPP and Other Innovative Approaches; Review of Dedicated Freight Corridors</p> <p>Module 3: Physical Appreciation of Case Area Connectivity Analysis; Socio-Economic Surveys; Survey of Freight Terminals; Land Cover and Land Use Survey; Settlement Growth Pattern; Freight and Cargo Handling: Issues; Freight-Passenger Traffic Conflict; Freight Parking Facilities: Challenges</p> <p>Module 4: Supply Demand Assessment Growth in Freight Demand; Existing Network Capacity Assessment; Scenario Building Exercises</p> <p>Module 5: Preparation of Logistics and Freight Management Plan Improvement of Freight Distribution: Planning Interventions; Improvement of Network Efficiency: Integration of Landuse and Transport; Design Interventions; Parking Management Strategy; Efficiency Evaluation of Suggested Interventions Against KPIs</p>		<p>Upon the completion, students would be able to:</p> <ul style="list-style-type: none"> • examine various factors affecting the movement of freight from one place to another • analyze the externalities for freight transfer including incurred cost at various stages • evaluate the current statutes and policy for logistics in India • create better scenario for the people living in the vicinity to ports and other logistics hub, as an outcome • planning and development of integrated plan in and around the logistics hub 		<ul style="list-style-type: none"> • Transport Logistics:Vol. 5 ,Classics in transport analysis, AC. McKinnon, Button J.F., Nijkamp .P, E. Elgar publisher (2002) • Urban Transit : Operations, Planning and Economics Vukan R. Vuchic, Wiley publishers (2005) 	

Subject Name Elective Open Common Pool	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Transport and Urban Development	MPTP 0302	Lectures/Tutorials	Theory	3	3	Knowledge

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
<p>The objective of the course is to inculcate the understanding of :</p> <ul style="list-style-type: none"> • Role of transport in development in different sectors • Investment policies for infrastructure development and its implications in urban areas at national and international levels. • dynamics between transport and urban development 	<p>Module 1: Transport and Development of Spatial Structure Urban Structure as a Function of Transport System; Network Growth and City; Evolution of Monocentric and Polycentric Cities; Transport Hub and Spatial Structure; Transit Oriented Development</p> <p>Module 2: Transport and Socio-Economic Development Theories of Economic Development and the Role of Transport; Transport System Mechanisms for Enhancing Productivity and Economic Growth; Spatial Effects of Transport – Economic and Geographic Perspectives; Social Role of Transportation; Settlement Pattern and Transport</p> <p>Module 3: Transport and Built Environment Influence of Transport Policies on Land Use and Urban Form; Public Places and Transport; Active Transport and Human Health; Built Environment and Transportation Choice; Landscape and Transport Routes; Transport in Urban Design</p> <p>Module 4: Transport and Urban Environment Urban Transport and Local Air Quality; Impact of Transport on Climate Change; Mitigation Options and Adaptation Strategies</p> <p>Module 5: Case Studies</p>	<p>Upon the completion, students would be able to:</p> <ul style="list-style-type: none"> • assess Housing situation in India and its relation with overall development. • assess Housing need and demand for any city with the help of basic statistics. • engage in discourses and critically analyse dynamics between transport and urban development 	

Subject Name Elective Open Common Pool	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Equity and Mobility Planning (PNK)	MPTP 0302 B	Lectures/Tutorials	Theory	3	3	Knowledge

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
<p>The objective of the course is to inculcate the understanding of :</p> <ul style="list-style-type: none"> • Role of transport in development in different sectors • 	<p>Module 1: Equity, Social Justice and Sustainable Urban Transportation</p> <p>The Geography of Activities; Time Space Geography: Understanding Time and Space Prism; Motility: Social Norms, Networks, Obligations, Myth of Travel Time Saving and Mode Choice; Democratic Distribution of Road Space; Equity and Accessibility; Transport Pricing and Equity; Role of Subsidy</p> <p>Module 2: Urban Transport Safety and Security</p> <p>Crime, Violence and Diminishing Quality of Mobility; Methods of Transport Infrastructure Safety Assessments; Road Safety Auditing; IRC Road Safety Audit Manual; Strategies for Urban Transport Safety and Security; Appreciating the 'Link' and 'Place' Value of Streets</p> <p>Module 3: Age and Gender in Transport</p> <p>Gender Equality and Transport Policy; Women Mobility Needs and Patterns; Women's Needs in the Design of Infrastructure, Vehicles and Public Transport Services; Women's Participation in the Decision-Making Process; Child Friendly Cities and Streets; Universal Accessibility; Traffic Calming Measures; Examples of Best Practices</p> <p>Module 4: Non Motorised Transport</p> <p>Need for NMT; Norms and Standards for NMT; NMT Infrastructure in India; Role of NMT in Urban Transport; NMT Crossings; Pedestrian Flow Calculation; Public Bicycle Sharing; NMT Best Practices</p> <p>Module 5: Socio - Psychological Models of Attitude and Behaviour</p> <p>Relationship Between Equity, Comfort and Travel Behaviour; Social Psychology and Mode Choice; Attitude Component Models; Attitude and Functions; Theory of Reasoned Action; Theory of Planned Behavior; Norm-Activation Theory; Motivation and Opportunity as Determinants (MODE); Maslow's Hierarchy of Needs and Mode Choice; Soft Transport Policy Measures and Nudge Theory</p>	<p>Upon the completion, students would be able to:</p> <ul style="list-style-type: none"> • assess Housing situation in India and its relation with overall develop • 	<p>NMT Infrastructure; Norms and Standards;</p>

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Port Planning & Management (GG)	MPTP 0303-A	Theory	Written Exam	3	3	
Learning Objectives	Subject Contents		Learning Outcome	Recommended Readings		

<p>The objective of the course is to inculcate the understanding of :</p> <ul style="list-style-type: none"> • economic significance of water transportation • modern ocean transportation practices • strategic relationship between ports and industries • geographical phenomenon for port development • port facility development and port circulation and transit management • cargo and container handling terminal facilities • environmental impact assessment and environmental management and monitoring plan • port operation and maintenance expenses • facility pricing, tariff and taxation 	<p>Module 1: Water Transportation and Its Growth</p> <p>Types of Water Transportation; History of Water Transportation in India and Abroad; Economic Significance of Water Transportation; Advantages and Disadvantages of Water Transport; Port and Harbour Development; Modern Ocean Transportation Practices; Containers and Cargo Transportation Through Water; Growth of International and Domestic Waterways Traffic in India; Strategic Relationship Between Ports and Industries; Forecasting Waterways Passenger and Freight Traffic; National and International Maritime Policy; Port Governance (Authorities, Bodies And Associations)</p> <p>Module 2: Geographical Phenomenon for Port Development</p> <p>Land and Ocean Dynamics; Tides and Currents; Natural Draft / Water Depth Along the Shoreline; Wind Strength; Beach Protection; Littoral Drift; Theory Of Sedimentary Transport; Role of Climate and Weather; Harbour Site Analysis</p> <p>Module 3: Port and Harbour Planning</p> <p>Master Plan of a Port; Port: Its Hinterland and Region of Indirect Influence; Landuse Zoning for Port Operation Works; Institutional Development for Planning; Linking Port and Industrial Zones; Transport, Distribution and Logistics Zones; Development Strategies for Regional Port Cities; Planning for Port Infrastructure Development; Layout of Port and Harbour Operation Area; Harbour Classification Based on Utility and Location;</p> <p>Module 4: Port Operations and Facilities Management</p> <p>Dredging Works; Harbour Docks Management; Locks and Lock Gates; Navigational Aids; Port Facility Development; Port Building and Transit Sheds; Port Circulation and Transit Management; Warehouse; Cargo and Container Handling Terminal Facilities; Port Facility Management for Shipping; Intelligent Transport System for Port; Accidents Prevention : Security and Safety Measures</p> <p>Module 5: Environmental Impact Assessment and Financial Planning</p> <p>Break Water Arrangements; Environmental Impact Assessment; Environmental Management and Monitoring Plan; Measures for Offsetting Adverse Impacts; Traffic Forecasting and Cost Analysis; Port Operation and Maintenance Expenses; Port Investment Strategies: Economic and Financial Feasibility; Marketing Strategies; Facility Pricing, Tariff and Taxation; Green Port Development</p>	<p>Upon the completion, students would be able to:</p> <ul style="list-style-type: none"> • list advantages and disadvantages of water transport • forecast waterways passenger and freight traffic • identify ideal port and harbour site location • prepare development strategies for port logistics • plan for cargo and container handling terminal facilities • carry out a Port EIA 	<p>Port Planning and Management</p> <ul style="list-style-type: none"> • Planning land use in port areas: getting the most out of port infrastructure, Takel, R. E, United Nations, 1983 • A Course in Docks and Harbour Engineering by Dr. S. P. Bindra, Dhanpat Rai Publication, New Delhi • Port Management and Operations, P.M. Alderton, Informa, 2008 • Port designer's handbook, Recommendations and Guidelines, C.A. Thoreson, Thomas Telford, 2003 • Ports and Networks- Strategies, Operations and Perspectives, Routledge, 2018 • Planning and Design of Ports and Marine Terminals, Hans Agerschou,, 2004 • Port Operations, Planning and Logistics, Khalid Bichou, Informa, 2009 • Climate Change and Adaptation Planning for Ports, Adolf K. Y. Ng, Austin Becker, Stephen Cahoon, Shu-Ling Chen, Paul Earl, Zaili Yang, Routledge, 2015
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Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Airport Planning and Management	MPTP 0303-B	Theory	Written Exam	3	3	
Learning Objectives	Subject Contents		Learning Outcome	Recommended Readings		

<p>The objective of the course is to inculcate the understanding of :</p> <ul style="list-style-type: none"> • the role of air transport • institutional governance of air transport • airport and runway capacity and configurations • airport site selection analysis • airport operations • environmental impact assessment and environmental management and monitoring plan • air port operation and maintenance expenses • facility pricing, tariff and taxation 	<p>Module 1: Air Transportation and Its Growth</p> <p>Role of Air Transport in India and Abroad; History of Air Transport; Institutional Governance of Air Transport: Directorate of Civil Aviations, International Civil Aviation Organization, Airports Authority of India; Present Status and Growth Trends of International and Domestic Cargo and Passenger Movement; Future Potential for Air Based Transportation and Air Traffic Management</p> <p>Module 2: Airport Capacity and Characteristics</p> <p>Different Types of Airport; Airport and Runway Capacity and Configurations; Runway Orientation and Basic Runway Length Design for Different Types of Aircrafts; Runway Geometric Design; Corrections for Elevation, Temperature and Gradient; Gate and Taxiway Capacity; Field Length Regulations</p> <p>Module 3: Planning for An Airport</p> <p>Airport Master Plan; Airport and Its Region of Influence; Airport Site Selection: Surveys and Analysis; Demand Modeling for Air Traffic (Passengers and Goods); Institutional Framework for Airport Planning; Airport Infrastructure Development and Airport Facility Management; Intelligent Transport System for Airport; Planning for Terminal Area and Airport Layout; Vehicular Circulation and Parking Area Plan; Regulatory Practices</p> <p>Module 4: Airport Operations and Security Systems</p> <p>Airport Strategic Planning for Ground Access; Classification of Obstructions Zoning Laws; Approach Zone and Turning Zone; Air Traffic Control Networks and Aids; Airport Grading and Drainage; Airport Visual Aids: Marking, Lighting and Signages; Airport Operations Support Systems; Maintenance and Rehabilitation of Airfield Pavements; Passenger Baggage and Cargo Management System; Airport Asset Management and Security System; Personal Safety and Security Arrangements; Emergency Management and Accident Prevention</p> <p>Module 5: Environmental Guidelines and Financial Planning</p> <p>Environmental Impact Assessment and Environmental Management Plan; Measures For Offsetting Adverse Impacts; Environmental Monitoring Programme; Airport Operation and Maintenance Expenses; Investment and Financing Strategies; Facility Pricing, Tariff and Taxation; Greenfield Airport</p>	<p>Upon the completion, students would be able to:</p> <ul style="list-style-type: none"> • plan for airport and runway capacity and configurations • undertake airport site location surveys • prepare development strategies for port logistics • plan for cargo and container handling terminal facilities • carry out a airport EIA 	<p>1. Airport Planning & Design by S. K. Khanna, M. G. Arora and S. S. Jain, Nem Chand & Bros Publication, Roorkee</p> <p>2.</p>
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Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Railway Planning & Management (YPS)	MPTP 0303-C	Theory	Written Exam	3	3	

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
<p>The objective of the course is to inculcate the understanding of :</p> <p>The focus of the Railway Planning & Management course is on principles of design of rail based transport infrastructure in urban context and familiarising with Indian standards of design for rail systems. The course will focus on acquainting students to existing practices and latest innovations.</p> <p>The objective of railway planning and management is to make students understand and aware about movement of people and goods through rail networks. Students will be familiarized with railway system and its operation requirements.</p>	<p>Module-I: Railway Transportation and its Development Role of Railways under Land based Transportation; Characteristics of Railway Transportation; Historical Development of Railway transportation in India; Economic Significance of Railway Transportation; Classification of capacity and purpose based Railways Transportation Systems; Classification of Speed Based Railways Transportation in India; Growth of Passenger Traffic, Containers and Cargo Transportation; Strategic Relationship of Indian Railways with Pan-India; Formation of Railway Zones in India; Governance, Administration and Institutional Arrangements; Legislative Support, Policy and Regulations for Indian Railways; International Railway Associations</p> <p>Module-II: Development of Railway System and Its Operations Topographic surveys and investigation to track alignment; Railway System components and specification of materials; Design and construction of Railway Track; Maintenance and management of Railway Track; Traction and Tractive Resistance; Stresses in Railway Tracks; Signaling and Traffic control system; Station and Yard Operations; Underground Railways and Tunneling</p> <p>Module-III: Rail Network and Station Planning Planning of Zonal Network development and management; Regional Influence and site selection for Station Development; Master Plan for Station Area Development; Surveys and site investigations; Traffic Estimation (passengers and goods) and Demand Modeling; Support and Service Infrastructure Development; Human Recourse Development for Station Management Intelligent Transport System; Environmental Impact Assessment and Environmental Management Plan; Railways Act 1989 and Railway Regulatory Board of India; Governing system and Institutional Development</p> <p>Module-IV: Services and Security Management Safety in Railway Operations; Security in Railway Operations; Station Area Facility Management; Station capacity management; Support and Service Infrastructure Management; Vehicular Circulation and Parking Area Management; Station Operation & Maintenance Expenses; Facility Pricing, Tariff and Taxation; Investment and Financing Strategies</p> <p>Module-V: Development of High Speed Railways and Metro Rails Development of High or Super Speed Railways; Modernization of Tracks for High Speed Railways; Rail based Urban Mass Rapid Transit Systems (MRTS) Light Rapid Transit System (LRTS); Metro Rail Planning, Management and Implementation; Idea of Transit Oriented Development along the MRTS; Metro Rail Terminal Development Plan; Investment and Financing Strategies; Best practices of High Speed Railways and Metro Rail Systems</p>	<p>Upon the completion, students would be able to:</p> <ul style="list-style-type: none"> •explain the emerging scenario with respect to rail networks in Indian and abroad •station area planning with indoor and outdoor planning principles •Institutional framework of service delivery in terms of commercial shops, cleaning of stations and for other amenities •Site instigation for examining the emergence of rail transit stations in a city and linking it to footfall, surrounding land use •Understanding the rail network designs 	<p>Railway Planning</p> <ol style="list-style-type: none"> 1. Railway Management and Engineering by Vassilios A. Profillidis 2. Handbook of RAMS in Railway Systems: Theory and Practice by Qamar Mahboob 3. A Text Book of Railway Engineering by S. C. Saxena and S. P. Arora, Dhanpat Rai Publication, New Delhi

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Project Planning and Investment Appraisal (PD)	MPTP 0304	Theory	Written Exam	3	3	

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
<p>The objective of the course is to inculcate the understanding of:</p> <ul style="list-style-type: none"> • a project's life cycle and all the processes concerning a project's successful planning to its successful execution • processes involving a project's proper identification, formulation, monitoring and evaluation • various mechanisms of financing transportation projects for its investment appraisal • several internal as well as external costs and benefits associated with the transportation projects • techniques for a project's appraisal with an emphasis on the financial and investment appraisal along with the stakeholders consultation processes 	<ol style="list-style-type: none"> 1. Life Cycle Of Projects, Project Identification and Formulation <ul style="list-style-type: none"> • Asset Condition Assessment • Infrastructure Maintenance, Enhancement and Expansion Requirements • Project Prioritization and Evaluation Criteria: Cost Effectiveness, Land Use, Mobility Improvements, Operating Efficiencies, Environmental Benefits • Integration of Consumer Behaviour: Congestion Pricing, Zoning, Parking • Life Cycle Cost Analysis of Transportation Projects: Concept and Case Studies 2. Project Monitoring And Evaluation <ul style="list-style-type: none"> • Strategic Planning and Transport Infrastructure Development: Long Range Plans/Transport Improvement Plans • Integration of Value of Travel Time Savings • Congestion Management Process • Alternative Analysis 3. Transportation Financing and Bid-Process Management <ul style="list-style-type: none"> • Basics of Transportation Funding Sources • National, State and Local Responsibilities • Debt Instruments: Commercial Paper, Bonds, etc. • Debt Structures: Ticket Size, Cash Flows • Innovative Financing: Infrastructure Financing Mechanisms, Tax Incremental Financing etc. • PPP: Leases, Joint Development, Availability Payment Structures, Value for Money. • Preparing for Procurement: Market Sounding – Preparing and Issuing an EOI, Draft Concession Agreement, Qualifying – Issuing RFQ and Shortlisting Bidders, Preparing Final Drafts of Key Project Documents, Bidding – RFP and Bid Evaluation, Contract Finalization and Award 4. Evaluating External Transportation Costs and Benefits <ul style="list-style-type: none"> • Evaluating Different Types of Costs like Vehicle Cost, Travel Time, Safety and Health, Parking, Congestion, Facilities, Land Values, Traffic Services, Transportation Diversity, Pollutions, Resource Consumption, Barrier Effect, Land Use Impacts, Waste Disposal • Evaluating Transportation Benefits: Techniques for Quantifying Transportation Benefits, Including Benefits of Marginal Cost Savings, External Benefits, Consumer Surplus Benefits, Economic Productivity and Development, and Benefits of Transportation Diversity • Criticisms of Transportation Costing 5. Project Appraisal Techniques and Stakeholders Consultation Processes <ul style="list-style-type: none"> • Financial Cost Benefit Analysis • Economic Cost Benefit Analysis 	<p>Upon the course completion, the students would be able to:</p>	

	<ul style="list-style-type: none"> • Social Cost Benefit Analysis • Stakeholder Identification for Transport Projects • Practices and Processes of Engaging with Stakeholders • Understanding the Public Consultation Process • Computer Application in Project Formulation • Sensitivity Analysis Techniques in Project Management • Appraisal Monitoring and Evaluation 		
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SECOND YEAR : THIRD SEMESTER						
Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Logistics and	MPTP 0305	Theory	Written Exam	3	3	

Freight Management (GG)					
Learning Objectives	Subject Contents		Learning Outcome	Recommended Readings	
<p>This subject takes a broad view of management of logistics and freight when we examine its role in trade and how this is then connected to the business concept of supply chain management.</p> <p>In this, students will learn the methods used in strategic logistics management along with the various techniques of financial analysis for operation efficiency and legislative aspects as well.</p>	<p>Module 1: Introduction to Logistics Management</p> <p>Logistics Management: Concepts, Definition, Evolution and Importance; Urban Logistics Ecosystem; Logistics Planning: The Actors and Their Contributions; Logistics Parks/ Hubs; Warehousing and Material Procurement; Material Storage, Handling, Processing, Packaging and Transportation; Third Party and Fourth Party Logistics; Reverse Logistics and Logistics in Trade</p> <p>Module 2: Management of Freight Transport</p> <p>Logistics and Mode Choice; Mode Characteristics and Key Features of Different Modes; Inter-Modal and Multi-Modal Transport; Shipping Business Environment and Containerization; Transport Cost Drivers; Freight Rate Structures; Freight Transport Best Practices: Vehicle Access and Loading / Unloading Operations, Low Emission Zones, Night Deliveries, Nearly Delivery Areas, ITS Applications</p> <p>Module 3: Strategic Logistic Management</p> <p>Determinants of Freight Demand; Distribution Channels and Distribution Costs; Logistics Acquisition and Production; Sourcing and Contracting; Logistics Network Planning: Vehicle Routing and Scheduling, Fleet Sizing, Location Decisions</p> <p>Module 4: Supply Chain Management</p> <p>Fundamentals of Supply Chain Management (SCM): Concept and Components; Supply-Demand Variables; Customer Services; Drivers of Supply Chain Performance; Supply Chain Segmentation: Product, Demand, Supply and Market Segmentation; Emerging Trends and Global Practices of SCM; e-commerce and Logistics</p> <p>Module 5: Legal Aspects and Liabilities</p> <p>Statutes and Policies for Different Logistics Operations in India and Abroad; Liabilities and Liabilities Resolution; Marine / Cargo Insurance; Freight Quality Partnerships: Case Studies</p>		<p>Upon the completion, students would be able to:</p> <ul style="list-style-type: none"> • Understand the dynamics of logistics and freight management in India and abroad • Understand the material flow and linking it to the industries and mode of transport • Understand the institutional framework, statutes and policy provisions for transport logistics 	<p>Logistics Planning and Management</p> <ul style="list-style-type: none"> • Transport Logistics: Past, Present, and Predictions, I. Baluch, Winning Communications, 2005 • Managing Transport Operations, Edmund J. Gubbins, Kogan Page Ltd, 2003 • Urban Goods Movement – A guide to policy and planning, KW Ogden, Ashgate Pub., 1992 • Logistics Operations and Management by R.Z. Farahani, S. Rezapour, L. Kardar, Elsevier Inc., 2011 • Logistics - An Introduction to supply chain Management, Donald Waters, Palgrave Macmillan, 2003 • Urban Transportation and Logistics- Health, Safety and Security Concerns, CRC Press, Taylor & Francis Group, 2014 • Optimising Transport Logistics process with Multi agent Planning & Control, Max Gath, Springe, 2015 • The Handbook of Logistics and Distribution Management, A. Rushton, P. Chroucher, P. Beker, Kogan Page Ltd, Fourth edition 2010. 	

			<ul style="list-style-type: none"> • Intermodal Freight Transport: Institutional Aspects, OECD,2001 • Logistics Management and Strategy, Competing through the supply chain, A. Harrison, RV Hoek, H Skipworth, Pearson, V edition 2014 • Freight Transport Modelling,M.Akiva,H. Meersman,E. Voorde, Emerald, 2013 • Intermodal Freight Transport and Logistics,CRC Press, Taylor & Francis Group, 2017
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Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Pre-Thesis Research Design	MPTP 0306	Lecture, Guided practice, Practical	Viva Voce	3	3	Knowledge and Research skill
Learning Objectives	Subject Contents		Learning Outcome	Recommended Readings		

<p>The objective of the course is to:</p> <ul style="list-style-type: none"> • Undertake literature review in order to finalize a research topic in Transport Planning and Logistics Management in Spatial context. • familiarize with the skills necessary to conduct research • appreciate different types of research design • distinguish between inductive and deductive reasoning • Acquire report writing skills 	<p>Unit 1: Structuring the Research Research: definitions, characteristics and types; Deductive vs. Inductive reasoning; Research methods vs. methodology; Need for a theoretical framework</p> <p>Unit 2: Research Design Meaning of research design; Features of a good research design; Various types of research design;</p> <p>Unit 3: Topic Identification and Literature Review Literature search; Types of literatures sources; Review of literature: objectives; Steps in literature review; Finding of research gap, Deciding on suitable research topic</p> <p>Unit 4: Research Process and Abstract Problem identification and formulation of problem statement; Formulating the aims and objectives, scope and limitations and research questions; Formulating the methodology and methods, preparation of a research proposal abstract.</p> <p>Unit 5: Research Design & Preparation for data Collection Identification of Tools and Techniques for research analysis, Listing of data/maps/ information to be collected and documented; Preparation of data collection format/questionnaire; Preparation of data collection checklists</p>	<p>Upon the completion, students would be able to:</p> <ul style="list-style-type: none"> • formulate a research framework • review literature • find research gap • formulate aims and objectives • frame the research questions • define the scope and limitations • finalise the data requirement • finalise the types of survey required • write the synopsis with aim, objectives, methodology, scope and limitations 	<ul style="list-style-type: none"> • Research Methods in Spatial Planning: A Case-Based Guide to Research Design, Elisabete Silva and Others (Ed.) Routledge, 2014 • Research Methods in Urban and Regional Planning, Xinhao Wang and Rainer Hofe, Springer, 2008 • Researching the City: A Guide for Students, Kevin Ward, Sage, 2014 • Research Methods in the Social Sciences, B. Somekh and C. Lewin, Vistaar, 2009 • Research Methods, John Adams and Others, Sage, 2012 • Research Methodology: Methods and Techniques, D.R. Kapoor, Regal Publishers, 2013 • Research Methods: The Basics, Nicholas Walliman, Routledge, 2015
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Second Year : Fourth Semester (TPLM)					
Subject Code	Subject	WCH		ESE Format	Credits
		L	P		

MPTP 0401	Thesis	0	21		VV	21
MPTP 0402	Transport policy and institutional framework	3	0	WR		3
MPTP 0403	General Proficiency	0	0		VV	1
	Total	3	21			25

WCH- WEEKLY CONTACT HOURS ESE- END SEMESTER EXAMINATION VV- VIVA- VOCE WR-WRITTEN EXAM

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Thesis	MPTP 0401	Lecture and Assignments	Written	3	3	Knowledge
Learning	Subject Contents		Learning Outcome	Recommended Readings		

Objectives			
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Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Transport policy and institutional framework	MPTP 0402	Lecture and Assignments	Written	3	3	Knowledge
Learning Objectives	Subject Contents		Learning Outcome	Recommended Readings		

<p>To impart necessary knowledge and skills to enable students:</p> <ul style="list-style-type: none"> • To understand the various Stakeholders in Transport Policy Preparation • To understand the regulatory and management systems in the transport and logistics sector • To give a base on the legal provisions for the development of transport sector 	<p>Unit 1: The evolution of Transport Policy and Planning Early improvements in roads and rail and water ways, motorway age, industrialisation and demand for urban mobility, Urban Transport planning and traffic in towns, establishment of freeways, extension of railways, paradigm shift in transport policy and sustainable development.</p> <p>Unit 2: Transport governance and institutional arrangements State and its role in transport and logistics development, Monopolies in Transport, Market failure and its regulation , Public private ownership, Bus deregulation and Rail privatisation,</p> <p>Unit 3: Transport Policy and Regulatory control Impact of Globalization, Deregulation and privatization in urban transport, Command and Control and economic incentives based policy implementation.</p> <p>Unit 4: Plans, procedures and contemporary policy agenda National Planning, NUTP, TOD Policy, Low carbon Mobility Plans, National Urban Transport Fund</p> <p>Unit 5: Legislative Approach to National Transportation Policy Unified Metropolitan Transport Authority Act, National highways act, Metro Act</p>	<ul style="list-style-type: none"> • Knowledge to define transport policy problem. • Learns to Identify alternative policy options and evaluation of the policy • Evaluate the transport governance and institutional mechanisms 	<ul style="list-style-type: none"> • Transport policy and planning in Great Britain, by Headicar, P. Routledge 2009, London • Introduction to sustainable transportation: policy, planning and implementation by Schiller, Preston L. Earthscan 2010, London • Integrated transport: from policy to practice by Givoni, Moshe. Routledge 2010, London • Journal of transport economics and policy, Bath The London School of Economics & the University of Bath
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Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
General Proficiency	MPTP 0403	Lecture and Assignments	Written	3	3	Knowledge
Learning Objectives	Subject Contents		Learning Outcome	Recommended Readings		

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