Bachelor of Planning (B.Plan)

Scheme and Syllabus

(As Approved in the 8th Meeting of the Senate held on 23.04.2018, School of Planning and Architecture, Bhopal)

Department of Urban and Regional Planning
School of Planning and Architecture, Bhopal
Neelbad Road, Bhauri, Bhopal - 462030, Madhya Pradesh (M.P.), INDIA

First Year – First Semester

First Year : First Semester						
Subject Code	**Name of Proposed Subjects (Six)**	**Credits**	**Lab**	**Lecture**	**Assignment/ Tutorial**	**Method of Evaluation**
BPLN0111	Planning Lab - I (Drawings, Graphics and Design)	9	9	0	0	Viva Voce
BPLN0112	Surveying and Levelling	4	3	1	0	Written & Viva Voce
BPLN0113	Appreciation of Built Environment	4	4	0	0	Viva Voce
BPLN0114	Introduction to Human Settlements	3	0	3	0	Written
BPLN0115	Introduction to Demography	3	0	3	0	Written
BPLN0116	Introduction to Planning	3	0	3	0	Written
	Total	**26**				

FIRST YEAR : FIRST SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
Planning Lab - I (Drawings, Graphics and Design)	**BPLN0111**	Lecture, Guided Practice, Group Exercise	Viva Voce	9	9	Knowledge and Skill
Learning Objectives	**Subject Contents**		**Learning Outcome**	**Recommended Readings**		
To impart necessary knowledge and skills to enable students: • create smart and powerful drawings and graphics • use graphic materials to support verbal presentations or written reports	**Unit 1: Drawing Equipments** Importance of graphics and visual presentation; Introduction to drawing equipments and mediums **Unit 2: Fundamentals of Drawing** Use of points, lines, polygons; Horizontal, vertical, diagonal, curved lines; Line thicknesses and intensities; Texture, colour and tone in materials; Dimensioning, lettering, standard symbols, colour-coding, legend, drawing formats, colour wheel **Unit 3: Concepts of Scales and Proportions** Sketching of natural and man-made elements; Concept of numeric and graphic scales and proportions **Unit 4: Geometric Projections** Orthographic, isometric, axonometric, oblique and perspective projections of one, two and three dimensional objects and geometric built forms; Concept of positive and negative spaces; Principles of planar geometry; Sections of solids - simple and complex solids **Unit 5: Architectural Design and Drawings** Appreciation of natural forms; Representation of natural elements in graphic form – concept of abstraction; Architectural building drawings - plans, elevations, and sections; Site plan indicating building footprint, open spaces, roads and other related objects; Measured drawings for simple buildings (The studio exercise shall draw upon the learnings of Unit V of Communication Lab BPLN 0112)		Upon the completion, students would be able to: • recall the fundamentals of drawing • distinguish between numeric and graphical scale • interpret different types of projections • appreciate abstraction • differentiate geometric projections • recognize different aspects of architectural building drawings • make sketches, drawings and models	• Architecture: Form, Space, & Order, Frank D. K. Ching, John Wiley & Sons, 2014 • Rendering with Pen and Ink, Robert W. Gill, Thames & Hudson Ltd., 1984 • Graphic Design for Architects : A Manual for Visual Communication, Karen Lewis, Routledge, 2015 • Architectural Graphics, C. Leslie Martin, Macmillan, 1970 • Architectural Graphic Standards: Student Edition, Charles George Ramsey and Harold Reeve, John Wiley & Sons, 2008 • Drawing for Graphics Design: Understanding Conceptual Principles, Timothy Samara, Rockport Publishers, 2012 • Architectural Graphics, Francis D. K. Ching, Wiley, 2015 • Basic Perspective Drawing: A Visual Approach, John Montague, John Wiley & Sons, 2013 • Architectural Drawing, David Dernie, Laurence King Publishing, 2014 • Architectural Drawing: A Visual Compendium of Types and Methods, Rendow Yee, John Wiley & Sons, 2007 • Architectural Working Drawings, Ralph W. Liebing, John Wiley & Sons, 1999 • Architectural Drawing, Franklin Edminster, Read Books, 2008 • Design Drawing, Francis D. K. Ching and others, John Wiley & Sons, 2010		

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Surveying and Leveling	**BPLN0112**	Lecture, Guided Practice, Group Exercise	Written and Viva Voce	4	4	Knowledge and Skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • list the steps in surveying • analyse spatial attributes of a place through levelling and contouring • appreciate spatial features through aerial photographs, photogrammetry and GPS / Total Station	**Unit 1: Introduction to Surveying** Basic principles of surveying; Measurement units, concepts of scales and conventional symbols; Stages in surveying; Concept of trigonometry; Traversing and tachometry in surveying; Errors in surveying **Unit 2: Primary Surveying Techniques** Chain surveying: principles and equipments; Obstacles and errors in chaining; Types of ranging; Errors and field application Compass surveying: types of compasses; Concept of bearing, magnetic declination; Effects of local attraction; Errors and field application **Unit 3: Conventional Surveying Techniques** Plane table surveying: accessories, methods, advantages & disadvantages; Errors; Field application Theodolite surveying:: an overview Tachometric surveying: an overview **Unit 4: Contouring& Levelling** Contouring: concept and characteristics; Methods of locating contours; Uses of contour maps Levelling: definitions, methods, types of levelling instruments; Temporary and permanent adjustments of level; Theory of direct, differential and reciprocal levelling; Longitudinal sectioning; Cross-sectioning; Errors in levelling; Field application **Unit 5: Advanced Surveying Techniques** Introduction to total station survey and application on field; Introduction to DGPS and application on field; Introduction to digital theodolite and application on field; Advantages & disadvantages of advanced surveying equipments.	Upon the completion, students would be able to: • recall the units, scales and symbols in surveying • carry out surveying exercise • undertake levelling exercise • locate contour and appreciate the topography of a settlement • use TSS and GPS in documenting spatial attributes of any location	• Surveying Theory and Practice, Raymond E. Davis, McGraw Hill • Surveying and Leveling, N. N. Basak, TMH, 2011 • Surveying and Levelling for Architects, Harbhajan Singh, Abhishek Publications • Surveying (Volume I), S. K. Duggal, TMH • Surveying (Volume I & II), B. C. Punmia, Laxmi Publications • Fundamentals of Surveying and Levelling , R Subramanian, Oxford University Press, 2014 • Site Surveying and Levelling, John Clancy, Routledge, 2013 • Surveying and Levelling, T. P. Kanetkar and S. V. Kulkarni, Pune Vidyarthi Griha Prakashan, 1988 • Surveying for Construction, William Irvine, McGraw Hill, 1995

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Appreciation of Built Environment	**BPLN0113**	Lecture, Guided Practice and Group Exercise	Viva Voce	4	4	Knowledge and Skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • understand built and unbuilt form in various dimension • recognise the importance of internal and external space distribution of a building • explain the geometry of a built form • appreciate the spatial organisation of built form • establish the relationship between the built and its surroundings • acquaint with the circulation system of buildings and network of services	**UNIT 1: Elements of Built Environment** Understanding of the 3-dimensional aspects of built and un-built; Interactions of built and unbuilt from micro to macro scale; Internal space distribution and components of buildings; Building and premise level exterior elements –site and surroundings; Public spaces and road networks as external elements of buildings **UNIT 2: Introduction to Studies on Built Form** Principles of spatial organization; Order, geometry and structure in built form; Concept of volume and enclosure; Climatic response in built environment design and construction; Building in a context **UNIT 3: Introduction to Building Systems** Understanding of internal, external and vertical circulation systems of buildings; Basics of Structural systems; Networks of service systems at site level and building level – water supply and plumbing, sewerage and sanitation etc.; Learning building materials and its contextual use through case studies **UNIT 4: Reading Drawings** Types of drawings: concept sketches, design development drawings, presentation, sanction, working, construction and detail drawings; Scales of drawings and context – site, cluster and building plans, interior details; Landscape, topography and contour plans, site sections, road , water supply and drainage networks at site and building levels **UNIT 5: Generating Built Scenarios** Defining density, FAR/FSI, land coverage; Guidelines for regulating and promoting built form; Three dimensional built form scenarios of varying scales	Upon the completion, students would be able to: • interpret the dimension of built and un built form • ascertain the internal and external space allocation in a building • interpret different types of drawings • indicate the adequacy of circulation system and networks of services • distinguish between different types of drawings • calculate density, FAR and land coverage • generate alternate three dimensional scenarios of built form	• Basics Architecture – 3: Architectural Design, Jane Anderson, Bloomsbury Publishing India Private Limited, 2010 • Construction: Principles, Materials and Methods Student Workbook, Harold B. Olin and Others, John Wiley & Sons, 1995 • Building Construction: Principles, Materials, and Systems, Medan L. Mehta and Others, Pearson, 2017 • Estimating and Costing in Civil Engineering: Theory and Practice, Including Specifications and Valuation, B N Dutta, UBS Publishers Pvt. Ltd., 2006 • Building Materials Products, Properties and Systems, M. Gambhir and Neha Jamwal, McGraw Hill Education, 2011 • Building Types and Built Forms, Philip Steadman, Matador, 2014 • Access for All: Approaches to the Built Environment, Wolfgang Christ, Springer, 2009 • Solutions for Climate Change Challenges in the Built Environment, Colin A. Booth, and J.E.Lamond, Wiley-Blackwell • Creating the Built Environment, Leslie Holes, E & FN Spon, Madras, 1997 • The Built Environment: A Collaborative Inquiry Into Design and Planning, Wendy R. McClure and Tom J. Bartuska, John Wiley & Sons

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Introduction to Human Settlements	**BPLN0114**	Lecture, Group Exercise and Assignments	Written	3	3	Knowledge and Value

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and value to enable students: • understand sociological aspects of Indian society • appreciate social change of a settlement • explain the settlement classification framework • analyse the settlement system • examine the hierarchy of settlements • recognise the pattern and form of settlements	**Unit: 1 Understanding Human Settlement** Origin of human settlement; Society: concepts and institutions; Social stratification: concept and bases; Agrarian classes; Industry and labour; Tribe: profile and location; Village: structure and change; Forms- caste, class, power & gender **Unit: 2 Social Change in Urban Settlement** Social exclusion & social capital; Processes of social change: industrialization, modernization, globalization, secularization; Processes of social change in India: Sanskritisation; Migration and adaptation ; Urbanity and urbanism **Unit: 3 Classification of Settlements** Rural urban dichotomy; Classification of rural and urban settlements by function, census, culture etc.; Ranking of settlements; Site and situation patterns; Settlement size; Peri urban areas; Rurbanisation **Unit: 4 Settlement System** Settlement system models and theories: Rank Size rule and Primate City model; Functional hierarchy and settlement system: The Central Place theory, range of goods, area of influence; Loschian theory of location; City – region relationship: the city and the region, the city region **Unit: 5 Morphology of Settlements** Morphology of rural settlements: factors affecting settlement pattern, village form and house typologies; Morphology of urban settlements: major morphological factors – natural and manmade; Slum and squatter settlements; Central Business District (CBD): delineation of CBD and its internal structure	Upon the completion, students would be able to: • list the social strata • explain the process of social change in Indian settlements • classify settlements across different classes • rank settlements on functional parameters • classify settlements on the basis of morphological features	• Geography of Settlements, R. Y. Singh, Rawat Publication, 2002 • Introduction to Settlement Geography, Sumita Ghosh , Orient BlackSwan , 1998 • Cities, Urbanisation & Urban Systems (Settlement Systems), K.Siddhartha and S.Mukherjee, Kitab Mahal, 2016 • An Introduction to Settlement Geography Paperback, William F. Hornby and Melvyn Jones, Cambridge University Press, 1991 • Urban Sociology, Samir Dasgupta, Pearson Education India, 2012 • Urban Sociology , N. Jayapalan, Atlantic, 2013 • Urban Sociology In India, M.S.A. Rao, Orient Blackswan , 1990 • Urban Studies (Sociology and Social Anthropology), Sujata Patel and Kushal Deb, Oxford University Press, 2009 • History of Human Settlements, Sengupta, B.K., New Delhi, Institute of Town Planners, India 2002 • Human Settlement, John R. Short, Oxford University Press, 1992 • Urban Growth Theories and Settlement Systems of India, Markandey Kalpana, Concept Publishing Company, 2011 • Social Change and Problems of Development in India, G. R.Madan, Allied Publisher Pvt. Ltd., 1978 • Human Settlement Development , (4 volumes), Saskia Sassen, UNESCO

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Introduction to Demography	**BPLN0115**	Lecture, Group Exercise and Assignments	Written	3	3	Knowledge and Skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • know the sources of demographic data • explain basic features of classical and contemporary population theories • explain the dynamics of population composition and distribution • explain the various methods of population projection and analysis thereof • examine different aspects of migration	**Unit 1: Introduction to Demography** Demography – definition and variables; Nature and sources of demographic data – civil registration method, census, sample surveys; Accuracy and error in demographic data **Unit 2: Survey of Theories of Population** Brief overview of population theories – Thomas Malthus, Coale and Hoover, Ravenstine, Demographic Transition **Unit 3: Population Composition and Distribution** Sex composition; Age composition; Age sex pyramid; Rural-urban divide; Population composition by education and occupation (LFPR, WFPR); Concept of demographic dividend **Unit 4: Techniques of Population Analysis and Population Projection** Ratio method: sex ratio, dependency ratio; Rate method: birth and death rate; Vital statistics method; Mortality measure – crude, specific and standardised death rate; Fertility measure – crude birth rate, general and age specific fertility rate; Population projection: geometric and exponential projection, Cohort – component method, extrapolation and interpolation, UN method **Unit 5: Demography of Migration** Basic measures and concepts – emigrants, immigrants, out migrants, return migrants, life time migrants, gross and net migration ; Types of Migration; Determinants of migration; Impact of migration	Upon the completion, students would be able to: • prepare data collection / compilation checklist • prepare age-sex pyramid and calculate LFPR / WFPR • project population and calculate different demographic parameters • appreciate the cause and effect of migration	• Demography: Techniques and Analysis, Asis Kumar Chattopadhyay and Anuj Kumar Saha, Viva Books, 2012 • India's Demography: Changing Demographic Scenario in India, P. K. Majumdar, Rawat Publications , 2013 • Handbook of Population and Development in India, A.K Shiva Kumar and Others, Oxford University Press, 2013 • Demography and Population Studies, O. Srivastava, Vikas Publishing House, 1994 • Introductory Methods in Population Analysis, R.B.Mandal and Others, Concept Publishing Company, 2007 • Geography of Population – Concepts, Determinants and Pattern, R.C. Chandna, Kalyan Publishers, Ludhiana, 2007 • Studies in Demography, S.C. Srivastava, Quality Publishing Company, Bhopal, 2004 • Fundamentals of Demography, P.K. Majumdar, Rawat Publishers, 2010 • Demography, Peter R. Cox, Cambridge University Press, 1976

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Introduction to Planning	**BPLN0116**	Lecture and Assignments	Written	3	3	Knowledge

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge to enable students: • appreciate land as the nucleus of spatial planning • define spatial planning • explain the principles of spatial planning • explain the framework of spatial planning • explain evolution of urban planning • appreciate various planning concepts developed in post industrial revolution periods • define different types of spatial plan	**Unit 1: Understanding Spatial Planning** Spatial Planning: definition, significance, rationale, principles and challenges; Roles and responsibilities: allocation of responsibility; Framework of spatial planning **Unit 2: Evolution of Planning** Planning history time lines – chronology of origin and evolution of city planning; Overview of cities across civilizations- Egyptian, Greek, Roman, and Indus Valley **Unit 3: Planning in Post Industrial Revolution Era** Overview of Garden City (Ebenezer Howard); City Beautiful (Daniel Burnham), Contemporary City (Le Corbusier); New Social Order (Lewis Mumford's); Ekistics (Doxiadis); Planning thought of Patrick Geddes **Unit 4: Land : Its Importance and Administration** Salient features of land as the nucleus of spatial planning; Land administration in India **Unit 5: Types of Spatial Plan** Overview of Regional (District) plan, Master plan, Zonal plan, Local area plan	Upon the completion, students would be able to: • justify the rationale of spatial planning • draw the spatial planning framework • explain the land administration system in India • recall the salient features of different civilization • appreciate the planning interventions made in post industrial revolution era • distinguish between different types of spatial plans	• Spatial Planning: Key Instruments for Development and Effective Governance, United Nations, New York and Geneva, 2008 • Conceptions of Space and Place in Strategic Spatial Planning, Simin Davoudi and Others, Routledge • Spatial Planning and Urban Development: Critical Perspectives, Palermo, Pier Carlo, Springer, 2010 • Fundamentals of Town Planning , G.K. Hiraskar, Dhanpat Rai Publications, 2012 • The Cities of Tomorrow : An Intellectual History of Urban Planning and Design Since 1880 ,Peter Hall, John Wiley & Sons, 2014 • An Introduction to Town and Country Planning, John Ratclliffe, Hutchinson, 1985 • Republics, Kingdoms, Towns and Cities in Ancient India, G. P. Singh, D.K. Print World Ltd, 2003 • Town Planning In Ancient India, Binode Behari Dutt, Isha Books, 2009 • The Ancient Greek City from Homer to Alexander , Murray Oswyn and Simon Price (Eds.), Oxford, 1999 • Egyptian Towns and Cities, Eric Uphill, Oxford, 2008 • Ancient Rome: City Planning and Administration, O.F. Robinson, Routledge, 1994 • Garden Cities of To-morrow, Ebenezer Howard, Swan Sonnenschein & Co.,1898 • Cities in Evolution: An Introduction to the Town Planning Movement and to the Study of Civics, Patrick Geddes, Hardpress Publishing, 2012 • The City in History: Its Origins, Its Transformations and Its Prospects, Lewis Mumford, Harcourt Brace International, 1968 • Patrick Geddes: Social Evolutionist and City Planner, Helen Meller, Routledge, 2005 • The Plan of Chicago: Daniel Burnham and the Remaking of the American City, Carl Smith, University of Chicago Press, 2007 • Ideas of Le Corbusier on Architecture and Urban Planning, Jacques Guiton, George Braziller Publishers, 2000 • The City of Tomorrow and Its Planning, Le Corbusier, Frederick Etchells (Translation), Dover Publications Inc., 2000 • EKISTICS: An Introduction to the Science of Human Settlements, Constantinos A. Doxiadis, Oxford University Press, 1968 • URDPFI Guidelines (Volume I and II), Ministry of Urban Development, Government of India, 2015

First Year – Second Semester

First Year : Second Semester						
Subject Code	**Name of Proposed Subjects (Six)**	**Credits**	**Lab**	**Lecture**	**Assignment/ Tutorial**	**Method of Evaluation**
BPLN0211	Planning Lab - II (Area Appreciation)	9	9	0	0	Viva Voce
BPLN0212	Communication Lab	4	4	0	0	Viva Voce
BPLN0213	Computer Applications in Planning	4	4	0	0	Written & Viva Voce
BPLN0214	Techniques of Planning - I	3	0	2	1	Written
BPLN0215	Application of Statistical Techniques in Planning	3	0	2	1	Written
BPLN0216	Elementary Urban Economics	3	0	3	0	Written
	Total	**26**				

FIRST YEAR : SECOND SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
Planning Lab - II (Area Appreciation)	**BPLN0211**	Lecture, Guided Practice, Group Exercise	Viva Voce	9	9	Knowledge and Skill

Learning Objectives	**Subject Contents**	**Learning Outcome**	**Recommended Readings**
To impart necessary knowledge and skills to enable students: • comprehend the typology of maps • explain the techniques to prepare maps of different types • appreciate cartographic protocols • examine thematic and pictorial documentation of spaces and places	**Unit 1: Introduction to Maps** Types of maps- political, cadastral, topographic, resource, network and transportation **Unit 2: Preparation Base and Key Maps** Preparation of base maps; Preparation of Key / Index Maps **Unit 3: Cartographic protocols** Choice of appropriate scales (numeric and graphic); Title of maps, legends, notation; Map enlargement and reduction; Superimposition of cadastral maps for revenue boundary delineation **Unit 4: Visual Appreciation (Area and Space Appreciation)** Visual appreciation studies of residential, commercial, institutional areas in urban / rural settlements Photo documentation of study area; Appreciation of place, scale, time in photo documentation **Unit 5: Preparation of Land Use Maps and Functional Layouts** Preparation of land use maps; Application of codes, standards, symbols for statutory plans	Upon the completion, students would be able to: • name and identify different types of maps • prepare maps at different scale • list the use of different cartographic protocols • list the dos and don'ts in visual and pictorial appreciation	• Site Analysis, T. Q. Edward, Architectural Media, 1983 • Site Analysis, A. James and La Gro Jr., Jon Wiley and Sons, 2013 • Surveying Vol. I, B.C.Punmia, Standard Book House, New Delhi,1983 • Text of Surveying Vol. I, P.B.Shahani, Oxford and IBH Publishing Co.,1980 • Key Concepts in Planning, Gavin Parker, Sage, New Delhi, 2012 • Urban Land Use Planning, Philip R. Berke, University of Illinois Press, 2006 • Concept Mapping for Planning and Evaluation, Mary Kane and William M. K. Trochim, Oxford University Press • Handbook of Applied Spatial Analysis: Software Tools, Methods and Applications, Manfred M. Fischer and Arthur Getis, Springer, 2009 • Cartography: Thematic Map Design, Borden Dent and Others, McGraw-Hill Education, 2008

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Communication Lab	**BPLN0212**	Lecture, Guided Practice and Group Exercise	Viva Voce	4	4	Knowledge and Skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • develop verbal and non verbal skill for expressive communication • visually literate through the art of listening, reading and writing • communicate verbally, digitally and through images • appreciate the conventions to be followed in report writing • use different softwares to enhance presentation skills	**Unit 1 : Listening** Types and principles of listening: outlines and signposting **Unit 2: Reading** Types and techniques of reading; Skimming, Scanning, SQ3R technique **Unit 3: Report Writing** Basic writing format; Arrangement of contents:preface, acknowledgements, indexing, key word indexing, body terminal section, appendices, references; Use of Word Processing software; Literature surveys; Use of library **Unit 4: Miscellaneous Writing Skills** Writing letters, memos, circular, notice, manuscripts; Resume writing; Drafting minutes of meeting **Unit 5: Visual Communication** Presentation techniques in digital, imagery and oral format; Understanding photography and use of camera; Presentation softwares: Photoshop, Google Sketchup, and MS Office applications (Excel, PowerPoint) *(One day training programme on Effective Communication Skill would be arranged for the students after end semester examination by a professional trainer)*	Upon the completion, students would be able to: • integrate written, verbal, and graphic communication techniques • write report following the contemporary conventions • simulate situations to synthesize arguments into final products	• Guide to Report Writing, Netzley, Pearson Education India, 2010 • How to Write Reports and Proposals, Patrick Forsyth, Kogan Page, 2013 • Writing Essays and Reports: A Student's Guide, Stephen McLaren, Viva Books, 2013 • Report Writing, Joan Van Emden and Jennifer Easteal, Nelson Thornes Ltd., 1993 • Visual Communication: Beyond Words, Pratish K. Mathur, Gnosis, 2006 • Visual Information Communication, Mao Lin Huang and Others, Springer; 2014 • Visual Communication (Handbooks of Communication Science), David Machin, De Gruyter Mouton, 2014 • Listening: Learn to Really Listen and Develop Active Listening Skills, Christian Olsen, CreateSpace Independent Publishing Platform, 2016 • Let Us Hear Them Speak: Developing Speaking-Listening Skills in English, Jayashree Mohanraj, Sage, 2015 • How to Read a Book: The Classic Guide to Intelligent Reading, Mortimer J. Adler and Charles Van Doren, Simon & Schuster, 2014 • Reading Journal: For Book Lovers Diary, Potter Style, Jou Edition, 2010 • Effective Communication Skills: The Foundations for Change, John Nielsen, Xlibris Corporation , 2008 • The Handbook of Communication Skills, Owen Hargie, Routledge, 2006 • Technical Writing, Presentational Skills and Online Communication, Greenlaw, Raymond, Idea Group,U.S., 2012 • Writing a Report: John Bowden, How To Books, 2011

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Computer Applications in Planning	**BPLN0213**	Lecture, Guided Practice and Group Exercise	Written and Viva Voce	4	4	Knowledge and Skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • explain the basic commands in CAD • explain the methods to edit, control and display data in CAD • appreciate the advanced CAD tools for better visual representation • appreciate the advanced visualization tools for better visual representation • explain the concepts of remote sensing, GIS, DBMS, data Structure and projections • explain GIS softwares and open source softwares • explain digital image processing tools and image classification techniques	**Unit 1: Drafting, Editing and Data Conversion in CAD** Need for computer aided design and drafting (CADD); Basic commands in CAD; Scanning and digitization of paper maps; Scale conversion, symbolization, layer control, plotting and related commands **Unit 2: Advanced Techniques of CAD** Advanced features: x-ref, dynamic blocks, 2D and 3D conversion, perspective view, rendering, use of material finishes, lighting and shadow pattern **Unit 3: Advanced Visualization Tools** Google sketch up; City engine; Infographics; Internet of Things; Community Viz etc. **Unit 4: Introductions to Remote Sensing and GIS** a. Remote Sensing; history, definition, aerial photography, EMR, Assessing Remote sensing data b. Basic concepts of Geographic Information system (GIS); Database Management System (DBMS); Data structures in GIS: vector and raster; Map projections and transformation c. Introduction to GIS software and other open source software for GIS **Unit 5: Digital Image Processing and Analysis** Raster data structure and representation; Visual and digital interpretation of image data; Spectral response curves; Advanced digital image processing; Image classification; Application of digital image analysis in planning	Upon the completion, students would be able to: • apply the basic commands in CAD • convert scanned images into digital format • use advanced CAD tools • perform image interpretation through classification • prepare thematic maps by image classification techniques • create vector and raster data in GIS format • fix the coordinate system and assign coordinate to map (spatial referencing to data)	• Beginner's Guide to Adobe Photoshop Elements, Michelle Perkins, Amherst Media, 2004 • Adobe Photoshop CS3: Comprehensive Concepts and Techniques, Gary B. Shelly and Others, Cengage Learning, 2009 • Computer Graphics & Animation, M.C. Trivedi, Jaico Publications • Computer Application in Planning, Architecture, Design : A Bibliography, Erich Bunselmeier, University of California, 1973 • Mastering AutoCAD 2017 and AutoCAD LT 2017, George Omura and Brian C. Benton, Wiley, 2016 • Auto Graphics Concepts for CAD, Richard M. Luepton, Prentice Hall, 2007 • CAD / CAM Principles and Applications, P.N. Rao,Tata McGraw Hill, 2002 • Computer Graphic System and Concepts, Solmon Rod, Addison Wesley Publishing Co., 1989 • Rendering in SketchUp, Daniel Tal, John Wiley & Sons, 2013 • GIS: A Short Introduction, Nadine Shuurman ,Blackwell Publishing, 2004 • Geographic Information System, Jatin Pandey, TERI, 2014 • Remote Sensing: Principles and Applications, B.C. Panda, Viva Books Pvt. Ltd., 2011 • Remote Sensing Basics, Shahab Faal, Kalyani Publishers, 2008 • Basics of Remote Sensing and GIS, S. Kumar, Laxmi Publications Pvt. Ltd., 2005 • GIS, Spatial Analysis, and Modeling, David J. Maguire, ESRI Press, 2005 • Visual Design On The Computer, Benjamin Wong and Wucius Wong, WW Norton & Co Publisher, New York, 2001

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Techniques of Planning - I	**BPLN0214**	Lecture, Guided Practice, Group Exercise	Written	3	3	Knowledge and Skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • list the data sets required for undertaking studies for different types and levels of planning • explain the salient features of different types of data collection techniques • interpret different types of data • list the steps under various types of data collection techniques • list the steps in analyzing trend of various spatial and non spatial variables • explain the basic protocols of data representation	**Unit 1: Urban Data Inventory** Data requirements for spatial planning – data checklist **Unit 2: Data Collection Techniques** Primary data collection techniques; Stages of conducting primary survey; Visual survey and reconnaissance survey; Personal interview and dialogues; Focussed group discussion; Participatory Rapid Appraisal; Designing of questionnaire Secondary data collection: published and unpublished sources Sources of data: Topo sheets, aerial photography, satellite imagery, GSI, Bhuvan geo portal **Unit 3: Types of Surveys** Socio – economic survey; Land use / utilisation surveys; Density surveys - net and gross residential and non-residential density patterns and analysis; Infrastructure surveys **Unit 4: Analytical Techniques** Trend Analysis: Moving average method **Unit 5: Data Representation Protocol** Land use and land cover classification and coding at various levels; Colour and black and white presentation techniques; Basic protocols of illustration	Upon the completion, students would be able to: • design questionnaire • conduct surveys of various types • calculate trend of different spatial and non spatial indicators • interpret landuse classification and coding • refer to the protocols of illustration	• How to Analyse Data, C.T. Fitz – Gibbon and L.L. Morris, Sage, 1987 • How to Conduct Survey, Arlene Fink, Sage, 2013 • The Survey Methods Workbook, A. Buckingham and Peter Saunders, Rawat, 2014 • Urban Settlement: Data, Measures, and Trends, David Canning and Others, Oxford University Press, 1992 • Database System Concepts, Abraham Silberschatz and Others, McGraw Hill, 2011 • Data Theory and Dimensional Analysis, William G. Jacoby, Sage, 1991Statistics for Management, Richard • I.Levin and David S. Rubin, Pearson, 2011 • Fundamentals of Statistics, S.C. Gupta, Himalaya Publishing House, 2013

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Application of Statistical Techniques in Planning	**BPLN0215**	Lecture, Guided Practice	Written	3	3	Knowledge and Skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • list the steps in the collection, consolidation, compilation, tabulation and interpretation of data • comprehend different measures of central tendency and dispersion • define and classify sampling • explain the importance of index number • explain the steps in design of experiments	**Unit: 1 Organising Data** Collection, classification and tabulation of data; Diagrammatic and graphic representation of data **Unit: 2 Measures of Central Tendency and Dispersion** Simple and weighted mean, mode, median, harmonic and geometric mean; Variance and standard deviation; Coefficient of variation **Unit: 3 Sampling** Statistic and parameters; Types of sampling; Different types of random sampling; Sample size; Sample size and standard error **Unit 4: Index Number** Construction of index number: simple and weighted index; Factor reversal test and time reversal test; Cost of living index number **Unit 5: Design of Experiments** Planning experiments; Phases of experimental design; Reacting to experimental claims; Factorial experiments *N.B. Hands on training shall be arranged on statistical softwares for the statistical tools under Unit 1 to 4*	Upon the completion, students would be able to: • create table from raw data • interpret the contents and purpose of any dataset from a table • measure central tendency and dispersion of a set of values of variables • compute sample size • identify the appropriate sampling method • compute the index number • decide the metric of measuring the variable, the sample size and the particular tool to analyse the data • use statistical softwares for various statistical tools	• Statistics for Management, Richard I. Levin and David S. Rubin, Pearson, 2011 • Statistics, Spiegel Murray R., TMH, 2012 • Statistics: A Gentle Introduction, Coolidge Frederick L., Sage • Statistics for Geographers and Social Scientists, Mandal, R. B., Concept Publishing • Statistical Techniques for Data Analysis, John K. Taylor and Cheryl Cihon, Chapman and Hall / CRC, 2004 • Fundamental of Statistics, S.C. Gupta, Himalaya Publishing House Pvt. Ltd., 2014

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Elementary Urban Economics	**BPLN – 0216**	Lecture and Assignments	Written	3	3	Knowledge

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge to enable students: • explain the problem of scarcity and purpose of economic theory • explain the basic laws of economics • explain the elasticity of demand • explain market equilibrium • explain axioms of urban and regional economics • explain the macroeconomic parameters	**Unit 1: Introduction to Basic Concepts** Micro and Macro economics; Positive and normative economics; Purpose of theory and problem of scarcity **Unit 2: Basic Economic Laws and Terminologies** Law of demand and supply; Market equilibrium; Elasticity of demand; Cost curves, Types of market, Break even point **Unit 3: Axioms of Urban Economics** Locational equilibrium; Externalities; Economies of Scale; Competition **Unit 4: Axioms of Regional Economics** Growth of a region; Agglomeration economies **Unit 5: Basic Macroeconomics** Measurement of gross domestic product and national income; Economic growth and economic development	Upon the completion, students would be able to: • draw demand and supply curve from a hypothetical schedule • measure equilibrium level output • measure elasticity of demand • interpret different cost curves • calculate breakeven point • appreciate scale economies and externalities • formulate the agglomeration function • define and distinguish between GDP and national income	• Economics, Richard Lipsey and Alec Chrystal, Oxford University Press, 2011 • Economics, Samuelson Paul A., TMH • Economics: An Analytical Introduction, Witztum Amos, Oxford University Press • Introduction to Urban Economics, Douglas M. Brown, Academic Press, 1974 • Fundamentals of Urban Economics, John F. McDonald, Prentice Hall, 1997 • Urban Economics, Arthur O'Sullivan, , New Delhi Mcgraw-Hill, 2012 • A Companion to Urban Economics, Richard J. Arnott and Daniel P. McMillen, Blackwell Publishing, 2006 • Urban Economics, Edwin S. Mills and Bruce W. Hamilton, Pearson, 1997 • Micro Economics, Dominick Salvatore, Schaum's Outline Series, McGraw Hill, 2009

Second Year – Third Semester

Second Year : Third Semester						
Subject Code	**Name of Proposed Subjects (Six)**	**Credits**	**Lab**	**Lecture**	**Assignment/ Tutorial**	**Method of Evaluation**
BPLN0311	Planning Lab - III (Neighbourhood and Site Planning)	9	9	0	0	Viva Voce
BPLN0312	Utilities and Services Planning	4	0	3	1	Written & Viva Voce
BPLN0313	Urban Mobility Planning	4	0	3	1	Written & Viva Voce
BPLN0314	Settlement Ecology and Environment	3	0	2	1	Written
BPLN0315	Housing and Community Planning	3	0	2	1	Written
BPLN0316	Planning Theory - I	3	0	3	0	Written
	Total	**26**				

SECOND YEAR : THIRD SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
Planning Lab - III (Neighbourhood and Site Planning)	**BPLN0311**	Lecture, Guided Practice, Group Exercise	Viva Voce	9	9	Knowledge and Skill

Learning Objectives	**Subject Contents**	**Learning Outcome**	**Recommended Readings**
To impart necessary knowledge and skills to enable students: • appreciate the rationale for planning at the neighbourhood level • identify major socio – economic, physical, environmental and regulatory issues pertinent to revitalize neighbourhoods • explain the steps in planning affordable and environmentally sustainable neighbourhood project	**Unit 1: Spatial and Socio - economic Appreciation of the Neighbourhood** Neighbourhoods: definition and delineation of neighbourhoods (preparation of base map); Socio-economic and cultural mapping of the neighbourhood to ascertain community needs, capabilities and behavioural pattern; Appreciation of various neighbourhood elements – existing and alternative built form, road network, connectivity to surrounding land, FAR, densities, building heights, open spaces, vacant land parcel, surrounding urbanscape and skyline; Gated enclaves; Documentation of neighbourhood typologies and respective characteristics **Unit 3: Site Analysis** Study of development alternatives following DCRs compatible for the site; Development and design standards based on case study findings and preparation of the design brief; Matching site potential with design brief **Unit 4: Preparation of Layouts** Preparation and evaluation of preliminary layout; Final layout showing plan, sections and elevation of housing typologies, circulation pattern and basic infrastructures following existing statutes; Preparation of presentation drawings; Preparation of model to an appropriate scale **Unit 2: Preparation of Unit Level Drawings** Preparation of plans, sections, elevations and important details of different housing typologies following the building byelaws and zoning regulations **Unit 5: Costing** Provisional costing of the proposal on the basis of statutory schedule of rates	Upon the completion, students would be able to: • prepare base map of the neighbourhood along with all neighbourhood elements • analyse the community strengths and weaknesses through socio economic survey • create working drawings for different housing typologies following relevant statutes • develop and evaluate alternative scenarios compatible with the site and existing statutes • create final layout for the neighbourhood	• Surveying Theory and Practice, Raymond E. Davis, McGraw Hill • Surveying and Leveling, N. N. Basak, TMH, 2011 • Surveying and Levelling for Architects, Harbhajan Singh, Abhishek Publications • Surveying (Volume I), S. K. Duggal, TMH • Surveying (Volume I & II), B. C. Punmia, Laxmi Publications • Fundamentals of Surveying and Levelling , R Subramanian, Oxford University Press, 2014 • Site Surveying and Levelling, John Clancy, Routledge, 2013 • Surveying and Levelling, T. P. Kanetkar and S. V. Kulkarni, Pune Vidyarthi Griha Prakashan, 1988 • Surveying for Construction, William Irvine, McGraw Hill, 1995

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Utilities and Services Planning	**BPLN0312**	Lecture, Guided Practice, Group Exercise	Written and Viva Voce	4	4	Knowledge and skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • define and distinguish between urban utilities, services and infrastructure • underscore the importance of public health in urban planning • list the norms and standards of urban water supply • explain the various aspects of urban sanitation practices • explain the salient features of urban sewer network and storm water drainage • list the steps in managing municipal solid waste • explain the spatial standards in the siting of fire station, electrical sub stations/ transformers, street lights, communication services network	**Unit 1: Introduction, Basic Concepts and Theories** Understanding urban utilities, services and infrastructures; Public health: role of physical planner in public health **Unit 2: Urban Water Supply System** Planning for water supply: analysis of water sources, quality and quantity; Water transmission and treatment methods; Water distribution network at different settlement level; Water tariff **Unit 3: Sanitation, Sewerage and Storm Water Drainage** Sanitation practices: technological, environmental, behavioural and cultural aspects; Various sanitation options and techniques Sewage generation: quantity, quality and locational attributes; Sewage collection, transportation, treatment and disposal technologies Storm water drainage: concept, importance and the technology **Unit 4: Municipal Solid Waste Management)** Municipal solid waste (MSW): classification and characteristics; collection, storage, transportation, processing and disposal of MSW; Methods of identification of suitable site for dumping ground / land fill; Community / NGO participation in MSW management **Unit 5: Urban Services (Fire Protection, Electricity, Communication Services)** Planning for fire station locations: space standards, locational criteria, land use and density; Siting of electrical substations / transformers, location of street lights; Allocation of space for communication services (gasline, optic fibre channel) (Norms and standards for all services)	Upon the completion, students would be able to: • explain the role of public health in urban planning • 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 suitable location for fire station, electricity substation / transformer, street lights, underground cable network etc.	• Infrastructure Planning, James Parkin and D. Sharma, Thomas Telford, 1999 • Urban Water Supply Handbook, Larry W. Mays, Mc Graw Hill, 2014 • Managing Urban Water Supply, D.E. Agthe and Others, Kluwer Academic Publishers, 2003 • Water Supply and Sewerage, Mcghee Terence J, Mcgraw Hill • Water, Wastewater and Storm Water Infrastructure Management, Grigg Neil S, CRC Press • Waste Water: Treatment and Reutilization, Fernando S. Garcia Einschlag, Intech • Urban Drainage, David Butler and John W. Davies, CRC Press, 2011 • Improving MSW Management in India, Da Zhu and Others, The World Bank, 2008 • Water: A Manual for Engineers, Architects, Planners and Managers, Ashok Kumar Jain, Daya Publishing • Fire Protection Systems, Jones A. Maurice Delmar, Cengage Learning • Fire Safety, Ingmar Sogaard, Nova Science Publishers • Municipal Solid Waste Management, N. N. Bandela and D. G. Tare, B. R. Publishing, 2009 • Public Health: Building Innovative Practice, Linda Jones and Jenny Douglas, Sage, 2012 • Manual on Sewerage and Sewage Treatment, Water Supply and Solid Waste Management, CPHEEO, Govt. of India

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Urban Mobility Planning	**BPLN0313**	Lecture, Guided Practice, Group Exercise	Written and Viva Voce	4	4	Knowledge and Skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • explain the cardinal principles of transport planning • define different types of intersections • explain the techniques of junction improvement • explain the street design elements • explain the street pattern and urban form • explain land use and transport interaction • explain the traffic and transport services • explain the various approaches to parking • explain the factors behind trip generation and distribution • appreciate the dynamics of trip assignment • explain the principles of transit oriented development	**Unit 1: Principles of Urban Transport Planning** Socio economic significance of transport planning; Cardinal principles of transport planning: economy, efficiency, equity, accessibility, environmental sustainability **Unit 2: Understanding Hierarchy and Network elements** Urban and rural road classification; Basics of geometric design, Traffic calming measures; Human powered transport infrastructure **Unit 3: Understanding Mobility and Land Use – Transport Interaction** Movement vs access; Functions of the street: speed and place**;** Street pattern and urban form; Accessibility: concept and mapping; Land use and transport interaction; Traffic and transport as a service: public transport, para-transit; Various approaches to parking **Unit 4: Measuring Traffic and Travel Behaviour** Study area definitions and delineation; Concept of PCU and level of service; Capacity of uninterrupted flow conditions: factors affecting capacity and level of service; Capacity of rural and urban roads and capacity at intersections; Traffic surveys: design of format, sample size; volume count / origin-destination and speed and delay survey; Collation, consolidation, analysis and interpretation of travel data; Parking studies and accident surveys **Unit 5: Planning and Management of Transport System** Stages of transport planning process: trip generation, trip distribution, modal split and trip assignment; Introduction to public transport; Transit oriented development (an overview)	Upon the completion, students would be able to: • classify the hierarchy of roads • identify the cross sectional elements • apply the junction improvement techniques • list the traffic calming measures • map accessibility • measure the level of service • calculate the PCU • carry out volume count • carry out origin destination survey • carrying out parking surveys • map trip generation and distribution • map the modal split	• Transportation Engineering and Planning, C. S Papacostas, PHI Learning Publications, 2009 • Transportation Systems Engineering: Theory and Methods, Ennio Cascetta, Kluwer Academic Publishers, 2001 • Metropolitan Transportation Planning, John W. Dickey, Taylor and Francis, 1983 • Traffic Engineering and Transport Planning, L.R. Kadiyali, Khanna Publications, 2010 • Transportation Planning, Shiftan Y and Glos Edward, Elgar Publishers, 2007 • Transportation Engineering: An Introduction, C. Jotin Khisty and B. Kent Lall , Phi Learning • Urban Transport: Planning and Management, A K Jain, APH Publications, 2013 • Principles of Urban Transport Systems Planning, B.G. Hutchinson, McGraw Hill Publications, 1974 • Managing Urban Mobility Systems, Rosário Macário, Emerald Group Publishing, 2011 • Cycling and Society, Dave Horton, Ashgate • Cycling and Sustainability, John Parkin, Emerald Group Publishing • Parking: Issues and Policies, Ison Stephen, Emerald Group Publishing • Transport for Suburbia: Beyond the Automobile Age, Mees Paul, Earthscan

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Settlement Ecology and Environment	**BPLN0314**	Lecture and Case Study and Assignments	Written	3	3	Knowledge

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • define environment and man – environment inter-relationships • explain the impact of urbanization on environmental degradation • define sustainable development and impact of environmental degradation on the eco systems • define urban eco system and explain the concept of eco city, urban green and bio diversity • give an overview of EIA and EMP • explain the salient features of environmental statutes etc.	**Unit 1: Understanding Environment** Definition of Environment; Changing man-environment relationship with focus on population, urbanization, resource depletion and environmental degradation **Unit 2: Perspectives of Environmental Planning** Eco-systems and their relevance to environment, resources and human settlements; Ecosystem services; Sustainable development; Integrating natural resources and development planning **Unit 3: Urban Ecological Planning** Cities and ecology; Urban eco system approach: concept of eco city and urban greens; Ecological parameters for planning at different levels; Concept of bio diversity; Overview of urban forest management **Unit 4: Environmental Impact Assessment** Overview of procedures, methods and techniques to conduct Environmental impact assessment (EIA); Review of case studies **Unit 5: Environmental Policies and Statutes** Environmental statutes: in Indian Context	Upon the completion, students would be able to: • narrate the occurrence of environmental degradation • appreciate the impact of environmental degradation on the eco system • recall the ecological parameters • list the steps in EIA	• Sustainable Cities for the Third Millennium: The Odyssey of Urban Excellence, Mega Voula, Springer • Sustainable Cities: Urban Planning Challenges and Policy, Kimberly Etingoff, Apple Academic Press • Sustainable Development Handbook, A Roosa Stephen, Fairmont Press • Sustainable Cities, David Satterthwaite, Earthscan, 2009 • Sustainable Energy Management, Golusin Mirjana, Elsevier • Environment and Development: China and India, Pachauri, R. K., TERI • Preventive Environmental Management: An Indian Perspective, Shyam R Asolekar, Centre for Environment Education • Environment and Economy, Cato Molly Scott, Routledge • Environment and Sustainable Development, Arvind Kumar, Shree Publishers • Environmental Concerns and Sustainable Development: Some Perspectives From India, Sakarama Somayaji, TERI Press • Human Settlements and Planning for Ecological Sustainability: The Case of Mexico City, Keith Pezzoli, The MIT Press, 2000 • Energy and Climate in the Urban Built Environment, Matheos Santamouris, and N. Demosthenes Asimakopoulos, James & James (Science Publishers) Ltd., 2001 • Ecology and Equity, Gadgil M. and Guha R, Oxford University Press, 2013 • Environmental Law and Policy in India - Cases Materials and Statutes, S. Divan and A. Rosencranz, Oxford University Publications , 2013 • Fundamentals of Ecology, Odum, E.P. Barrett and Others, Cengage Learning Publication, 2005 • Sustainable Practices in the Built Environment, Craig Langston (Ed.), Butterworth-Heinemann, 2001 • Building Ecology: First Principles for A Sustainable Built Environment, Peter Graham, Wiley-Blackwell, 2002

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Housing and Community Planning	**BPLN0315**	Lecture, Guided Practice and Group Exercise	Written	3	3	Knowledge and skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • appreciate current issues in housing from equity and efficiency point of view • differentiate between housing need and demand • explain the methods of assessing housing shortage • name the data sets required for housing studies • explain housing sub system • appreciate different government interventions to address housing issues • examine housing densities • identify housing design parameters and their relations to costs • explain the salient features of housing policy and different housing programmes	**Unit 1: Introduction** Defining house and housing; Urbanisation and housing; Equity and efficiency parameters of housing; Current issues in housing **Unit 2: Assessing Housing** Difference between housing need and housing demand; Understanding housing shortage; Housing demand assessment methods: definition and limitations; Sources of housing statistics data and their uses (Census, NSSO etc.); Urban and rural housing statistic; Quantitative and qualitative aspects of housing **Unit 3: Housing Development Process** Factors affecting residential location; Ecological and institutional approach to housing; Housing subsystems and their characteristics: formal and informal housing, public and private sector housing; Development process: policy context, actors and their interrelationships; Inner city housing: slums, squatter / unauthorized / incremental / marginal and partial housing, site and services development; Role of institutions in housing: international agencies, NGOs, State, financing organizations, private developers, cooperatives **Unit 4: Housing Standards and Design** Factors of residential densities: location, costs and development control regulations; Housing designs parameters, materials and their relationship to costs; Housing design imperatives: climate and disaster compliance, community based diversity **Unit 5: Housing Policy Analyses** Evaluation of urban and rural housing policy and programmes in India; Slum improvement programmes; Comparative policy analysis	Upon the completion, students would be able to: • differentiate between the equity and efficiency parameters of housing • interpret housing data • calculate housing shortage • measure residential densities based on different factors • list the housing design parameters and explain their relevance to housing costs recall the context wise policy recommendations under housing sector	• Housing and Urbanisation: A Study of India, Cedric Pugh, Sage, 1990 • Community Participation Methods in Design and Planning, Sanoff, Henry, John Wiley & Sons • The Affordable Housing Reader, Rosie Tighe and Elizabeth Mueller, Routledge, 2012 • Housing : Changing Needs and New Directions, V. Gandotra and Others, Authors Press, 2009 • Housing, Markets and Policy, Peter Malpass and Rob Rowlands, Routledge, 2010 • Housing Markets and Planning Policy, Jones Colin, Wiley-Blackwell, 2009 • Housing Laws In India- Problems and Remedies, P.K. Sarkar , Eastern Law House Private Ltd. • Global Strategy for Housing in the Third Millennium, W. A. Allen, Taylor & Francis • Urban Development and Housing in India- 1947 To 2007, Rishi Muni Dwivedi, New Century Publications, 2007 • Holding Their Ground: Secure Land Tenure for the Urban Poor in Developing Countries, Durand Lasserve and Royston L, Earthscan, 2002 • Community Planning Handbook: Wates Nick, Routledge, 2014 • Community Planning: An Introduction to the Comprehensive Plan, Eric Damian Kelly, Island Press, 2009 • Community Planning: Integrating Social and Physical Environments, Phil Heywood, Wiley Blackwell, 2011 • Sustainable Housing: Principles and Practice, Brian Edwards and Others (Eds.), Taylor & Francis, 2000 • Urban Land Use: Community-Based Planning, Kimberly Etingoff (Ed.), Apple Academic Press, 2016

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Planning Theory - I	**BPLN0316**	Lecture and Assignments	Written	3	3	Knowledge

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • define planning theory and its typology • trace the evolution of planning theories • define the basic tenets of neo liberalism • explain the salient features of Chicago school • appreciate the elements of collaborative planning • explain the salient features post modern planning • explain the physio - economic and socio - political entity of a city • define post Fordist urbanism	**Unit 1: Defining Planning Theory** Understanding Theory; Types of Theory and their characteristics; Ontology and epistemology of planning theory; Planning theory: definition and typology; Systems theories and rational process theories in planning **Unit 2 : Evolution of Planning Theories** Paradigm shifts in Planning theory with time and context; Transition to socially based theories and urban ecology- Chicago School; Neo classical economics and urban geography; Neo liberalism and planning; Pragmatism and planning; **Unit 3: Ideological Bases of Urban Planning** City as an organism; Urban planning in response to political ideologies - socialist planning, capitalist planning and mixed economy planning ; Economic and social determinants of land use **Unit 4: Post Modern and Collaborative Planning** Post modern planning; Influence of post structuralism on planning; Collaborative planning and communicative rationality – planning as a communicative process **Unit 5: Globalisation and Urban Transformation** Urban decline and obsolescence; Urban economic renaissance: Post Fordist urbanism; Globalisation and the new economic geography	Upon the completion, students would be able to: • explain the distinction between systems approach and rational approach • comprehend the changes in planning theory in response to changing contexts • map the evolution of planning theories • list the salient features of city as an organism, as a physical, political and economic entity etc • explain methods collaborative planning and communicative rationality • develop understanding of various city functions and reason behind obsolescence and urban decline. • Explain urban economic decline and renaissance in the context of Post Fordist urbanism, globalisation and its implications in planning for future cities	• 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 & Distributers 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 • Urban Theory: A Critical Assessment, John Rennie Short, Palgrave MacMillan, 2016

Second Year – Fourth Semester

Second Year : Fourth Semester						
Subject Code	**Name of Proposed Subjects (Six)**	**Credits**	**Lab**	**Lecture**	**Assignment/ Tutorial**	**Method of Evaluation**
BPLN0411	Planning Lab - IV (Transportation Planning)	9	9	0	0	Viva Voce
BPLN0412	Introduction to Regional Planning	4	0	3	1	Written
BPLN0413	Remote Sensing and GIS in Planning	4	4	0	0	Viva Voce
BPLN0414	Techniques of Planning – II	3	0	2	1	Written
BPLN0415	Planning Theory - II	3	0	3	0	Written
BPLN0416	Planning Legislation	3	0	3	0	Written
	Total	**26**				

SECOND YEAR : FOURTH SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
Planning Lab - IV (Transportation Planning)	**BPLN0411**	Lecture, Guided Exercise, Group Works	Viva Voce	9	9	Knowledge and Skill

Learning Objectives	**Subject Contents**	**Learning Outcome**	**Recommended Readings**
To impart necessary knowledge and skills to enable students: • appreciate the functional and geometric classification of roads and their cross sectional elements • visualise land use transport integration opportunities • conceptualise traffic engineering proposals • critically evaluate the traffic management scenario at area level • appreciate the requirements of a full-fledged transportation planning exercise for an urban area	**Unit 1: Classification of Roads** Understanding of functional and geometric classifications of urban and rural roads and their cross-sectional elements **Unit 2: Types of Transport Surveys** Different types of transport surveys: methods, analysis, presentation of data preparation of reports thereof **Unit 3: Road Geometrics and Surveys** Roads: geometrics and components; Surveys for traffic volume, origin destination, spot speed, speed and delay, parking and pedestrian traffic Design and preparation of layout for road intersections, rotaries and signalized intersections **Unit 4: Identification of Transportation Problems and Issues** Identification of problems, issues and thrust areas based on city and zonal priorities **Unit 5: Area Mobility Plan** Preparation of an area circulation plan by studying the existing land use, existing circulation pattern, level of services for a delineated area through networks improvement and low cost traffic management measures	Upon the completion, students would be able to: • carry out geometric classification of roads and their cross sectional elements • prepare network hierarchy maps • document traffic and transportation related issues • carry out traffic volume count survey, origin destination survey • execute spot speed and speed delay survey • undertake parking and pedestrian traffic survey • propose for redesign of road intersections • prepare a circulation plan • prepare traffic management plan • formulate parking strategy • formulate public transport integration and last mile connectivity strategy • prepare urban mobility plan	• Modelling Transport, Juan De Dios Ortuzar and Luis G. Willumsen, John Wiley & Sons, 2011 • Transport Planning, David Banister, Spon, 2002 • Transport Planning and Traffic Engineering, Coleman O'Flaherty, Butterworth-Heinemann, 1996

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Introduction to Regional Planning	**BPLN0412**	Lecture, Case Study Method, Guided Practice, Group Exercise	Written	4	4	Knowledge and Skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • appreciate the rationale for planning at regional level • explain the difference between regional disparity and diversity • explain the trajectory of regional growth • analyse the structure of Planning models • explain the functions of DPC and MPC • describe the salient features of regional plans of India	**Unit 1: Understanding of Region** Definition of a region; Typology of regions; Problem region and regional problems; Rationale behind regional planning **Unit 2: Appreciating Regional Interdependence, Disparity and Diversity** Regional disparity vis a vis regional diversity; Measuring regional disparity and interdependence (factor analysis and regional input-output model) **Unit 3: Regional Growth** Regional growth models: Harrod-Domar, neo - classical and export based models; Predictive vs. planning models; Structure of the planning models; Fixed and flexible targets **Unit 4: Institutional Mechanism in Regional Planning in India** District planning in the context of constitution 73rd and 74th amendment acts; Functions of District Planning Committee (DPC) and Metropolitan Planning Committee (MPC) **Unit 5: Metropolitan Planning and Development** Metropolitan planning: concepts and framework; Metropolitan growth and associated problems; Metropolitanization: decentralization, area of Influence: Concepts of satellite towns and counter-magnets *(Assignments in this subject shall inter alia include critical review of national and international regional plans)*	Upon the completion, students would be able to: • identify the typology of a region from given characteristics • measure regional inter regional disparity • measure regional interdependence • work out the different growth models • refer to the powers of DPC across various regional planning functions • trace down the regional growth path through models • refer to the powers of DPC / MPC across various regional planning functions • trace down influence and dominance of metropolitan region	• Regional Planning, David A. Plane, (Ed.), Cheltenham Edward Elgar, 2008 • Research Methods in Urban and Regional Planning, Xinhao Wang and Rainer Hofe, Springer, 2007 • Regional Planning – Concepts, Techniques, Policies and Case Studies, R.P. Misra, , Concept Publishing Company, 2010 • An Introduction to Regional Planning, John Glasson and Tim Marshall, Routledge, 2007 • Regional Planning and Development, R.C. Chandana, Kalyani Publishers, 2015 • Regional Planning in India, Mahesh Chand and V.K. Puri, Allied Publishers Pvt. Limited, 2010 • Regional Planning, J.G.M. Hilhorst, Rotterdam University Press, 1971 • Geography: Realms, Regions and Concepts, Harm J. De Blij and Others, Hoboken, 2014 • Readers' Volume on Regional Planning and Development, Abdul Qaiyum, ITPI, New Delhi, 2010 • The Role of Intermediate Towns in Regional Development : A Case Study, National Institute of Urban Affairs (NIUA), NIUA, New Delhi, 2004 • Regional Development and Planning in India, V.K.Nath, Concept Publication • Urban and Regional Planning Reader, Eugenie L. Birch, Oxon Routledge, 2009

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Remote Sensing and GIS in Planning	**BPLN0413**	Lecture, Guided Practice, Group Exercise	Viva Voce	4	4	Knowledge and Skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • explain the concept of satellite image analysis • explain the concept of remote sensing indices, e.g., NDVI, NDBI and temporal data • explain spatial data base exercise and map symbology • explain non-spatial data base and overview of table toolset • explain geo-processing methods and geo-coding process • explain basic features of spatial analysis • explain procedures of map composition • explain spatial analyst and 3D analyst toolbox • explain Global Positioning System	**Unit 1: Image Analysis and Multi-image Manipulation Indices** Concept of satellite image analysis; Concept of remote sensing indices: NDVI and NDBI; Change detection training and implementation in planning **Unit 2: Data Creation: Spatial and Non-spatial** a. Creating spatial database; Georeferencing- choosing coordinate system; Digitizing base map; Mapping qualitative data; Classifying numeric data; Choosing symbols and basic elements of map design b. Relating non-spatial data; Attribute data: overview of tables, joining and relating tables, editing, calculating and importing tables **Unit 3: Geoprocessing** a. Base maps; Thematic maps; Spatial queries; Queries on tables : managing results from queries; Geocoding process b. Spatial analysis: buffering, dissolve, intersect, union, extraction, clip, erase, append and merge c. Presenting maps in GIS software: assigning scales, setting scale bars, labelling, text and annotation **Unit 4: Analysis** Land suitability analysis: methods of overlay; Spatial analyst; 3D analysis for Digital Elevation Model (DEM) **Unit 5: Global Positioning System** Integrating GIS and Global Positioning System (GPS)	Upon the completion, students would be able to: • prepare NDVI, NDBI and change detection maps • carry out projection transformation and preparation of database for GIS maps • prepare geospatial maps • prepare map based on secondary data • prepare base maps, thematic maps • work in layout view for final map preparation • prepare land suitability maps and topography maps • perform GIS analysis through query building, map overlay and geoprocessing prepare location map, route map and able to convert a GPS file into shape-file features	• Remote Sensing and GIS, Basudeb Bhatta, Oxford University Press, 2011 • Remote Sensing and GIS Integration, Q. Weng, Mc. Graw Hill, 2010 • Applied Remote Sensing for Urban Planning Governance and Sustainability, Maik Netzband, Springer, 2013 • Remote Sensing and Geographical Information Systems: Basics and Applications, P.R. Vyas (Ed.), Rawat Publications • Remote Sensing and GIS for Natural Resource Management, Bir Abhimanyu Kumar, Academic Excellence • Remote Sensing Basics, Shahab Fazal, Kalyani Publishers • Remote Sensing Digital Image Analysis: An Introduction, John A. Richards, Springer • Remote Sensing: Principles and Applications, B.C. Panda, Viva Books • Remote Sensing and GIS: Theories, Methods, and Application, Weng Qihao, Mcgraw-Hill, 2010 • Remote Sensing and Image Interpretation, Thomas M. Lilles and and Others, John Wiley and Sons Ltd., 2001 • Concepts and Techniques of Geographic Information Systems, C.P. Lo and A.K.W. Yeung, PHI Learning Private Limited, 2012

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Techniques of Planning – II	**BPLN – 0414**	Lecture, Guided Practice, Group Exercise	Written	3	3	Knowledge and Skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • analyse spatio economic attributes of a settlement • list the spatial standards for different types of land uses, services and utilities • explain the methods of scaling and standardisation • examine the connectivity indices • analyse spatial uniformity and diversity • examine spatial attributes of a location	**Unit: 1: Spatio Economic Analysis** Locational attributes of activity and population; Nearest neighbourhood analysis; Economic base analysis: location quotient and localisation coefficient **Unit 2: Spatial Standards** Estimation of space requirements for residential, industrial, commercial and recreational areas; Space requirements for facility areas, utilities and networks **Unit 3: Spatial Data Analysis** Spatial characterization, Scaling and standardization: z score; Common errors in spatial analysis- locational fallacy, atomic fallacy and ecological fallacy; Connectivity indices - Alpha, Beta, Gamma, Detour indices **Unit 4: Spatial Uniformity and Diversity** Chi – square test; Lorenz curve; Odds ratio; Gibbs-Martin index of diversification **Unit 5:Analysis of Spatial Attributes** Carrying capacity analysis; Threshold analysis; Land suitability analysis (GIS tools to be integrated for instructing	Upon the completion, students would be able to: • calculate economic base of a settlement • estimate space requirement for different land uses and services / utilities • scale and standardize spatial data • prepare different connectivity indices • find out spatial uniformity and diversity statistically and mathematically carry out different types of analysis for examining spatial attributes of a location	• Quantitative Geography, Ashis Sarkar, Orient Black Swan, 2013 • Quantitative Geography, A. Stewart Fotheringham, Sage, 2010 • Quantitative Techniques in Geography, R. Hammand and P.S. Mc Cullagh, Clarendon Press, Oxford, 1978 • Spatial Analysis, Mark R. T. Dale and Marie Josée Fortin, Cambridge University Press, 2005 • Handbook of Applied Spatial Analysis: Software Tools, Methods and Applications, Manfred M. Fischer and Arthur Getis, Springer, 2009 • Studies in Applied Geography and Spatial Analysis: Addressing Real World Issues, Robert Stimson and Kingsley E. Haynes, Edward Elgar Publishing Limited, 2012 • Spatial Analysis, Mark R. T. Dale, Marie-Josée Fortin, Cambridge University Press • Spatial Data Analysis: Theory and Practice, Robert Haining, Cambridge University Press, 2009 • Spatial Data Analysis: Models, Methods and Techniques, Manfred M. Fischer and Jinfeng Wang, Springer, 2011 • Spatial Statistics, M.A. Kalkhan, CRC Press, 2011

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Planning Theory - II	**BPLN0415**	Lecture and Assignments	Written	3	3	Knowledge

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • explain methods and features of advocacy, equity and participative planning • explain various methods of participation and its relevance in planning • explain role of capability and other social factors influencing planning • explain methods of evaluation of development plans and implementation strategies • explain compact city, and other concurrent approaches for city forms	**Unit 1: Advocacy Planning, Pluralism and Equity Planning** Meaning, historical background and purposes of Advocacy Planning Model; Main features of Advocacy Planning Model; Relevance for planning practice; Equity and its various definitions; Major components of the Equity Planning Model; Implications on the role of planners in planning practice. **Unit 2: Participation and Planning** Public interest and its forms; History and significance of public participation; Methods of public participation; Impediments to public participation and conditions for effective public participation; Public participation and empowerment; Participation, policy formulation and implementation. **Unit 3: Capabilities, Race, Gender, Religion and Caste** Defining functioning and capabilities; Exploring relevance of Sen and Nussbaum's capabilities to planning; Role of planning and planners in enhancing capabilities of the poor; Capabilities perspective on slums and squatters; Feminist planning theory; Planning, caste and religion; Planning rights and responsibilities. **Unit 4: Planning, Implementation and Evaluation** Need for evaluation; Inseparability of planning and evaluation; Planning theories and evaluation; Methods of evaluating development plans; Theories of implementation of planning policies and development plans. **Unit 5: Current Global Practices** Impact of Information Technology; Changes in Technology, social orders and global political affiliations impacting changes in planning of global cities; Impact of global negotiations and inter country protocols on climate change, urbanisation, housing, etc., on new city development concepts such as smart city, compact city, sponge city, healthy city, etc.	Upon the completion, students would be able to: • Use models of equity planning, advocacy planning and participative planning while preparing city and community development plans. • Assess capabilities of city residents particularly of weaker sections of society and prepare strategies enhancing the capacity. • Evaluate alternate development plans and policies. • Explain and apply various contemporary and upcoming concepts of city planning and form while preparing strategies and plans for developing city and region.	• Readings in Planning Theory, Susan Fainstein and Scott Campbell, Blackwell Publishers, 2003 • Planning Theory: From the Political Debate to the Methodological Reconstruct, Archibugi Franco, Springer, 2008 • Planning Theory, P. Healey, Pergamon Press • A Reader in Planning Theory, A. Faludi, Butterworth-Heinemann Ltd., 1973 • Planning Theory for Practitioners, Michael P. Brooks, Planners Press, American Planning Association, 2002 • Urban Theory: A Critical Assessment, John Rennie Short, Palgrave MacMillan, 2016 • The Information City, Manuaell cadtells, Blackwell Publishers, 1999 • The Global City, Saskia Sassen, Princeton University Press, 1991 • Towards the healthy city, Jason Corbun, MIT Press, 2009.

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Planning Legislation	**BPLN0416**	Lecture and Assignments	Written	3	3	Knowledge

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • understand the legal framework of urban planning • explain the constitutional provision to urban governance and planning • explain the salient features of model municipal act • appreciate the statutory legality of planning legislations • explain the salient features of various urban statutes	**Unit 1: Understanding Legislation** Sources of law (legislation, custom, precedent); Definition of bill, ordinance, Act, bye-laws; Statutory planning: definition and relevance; Eminent domain and police power; Scheduled Areas **Unit 2: Constitution of India** Synoptic view of Constitution of India: Constitutional provision to urban governance and planning **Unit 3: Legislation: Urban Governance** 73rd and 74th Constitutional (Amendment) Acts; Model Municipal Act **Unit 4 Legislation: Urban Planning** Model Town and Country Planning Acts, Urban Development Authority Acts, Housing Board Acts, Slum Improvement Acts, Land revenue administration; Land conversion; Legal basis of land acquisition and development etc. **Unit 5: Inventory of Different Urban Affairs Legislations** Inventory of different statutes pertinent to urban affairs; Cataloguing of urban statutes across different aspects of urban planning (Subject specific legislation, e.g., Environmental Protection Act, National Disaster Management Authority Act etc shall be taught under the respective subjects)	Upon the completion, students would be able to: • distinguish between ordinance and Act, bill and Act • relate an urban affair to the relevant statute • refer to the legislative provisions for different aspects of urban planning	• Introduction to the Constitution of India, Durgadas Basu, Lexis Nexis, 2015 • Model Municipal Act, Ministry of Urban Development, Government of India • Model Town and Country Planning Act, TCPO, Govt. of India • Planning Legislation, U.C Shah, Suvidha Law House Pvt. Ltd., 2015

Third Year – Fifth Semester

Third Year : Fifth Semester						
Subject Code	**Name of Proposed Subjects (Six)**	**Credits**	**Lab**	**Lecture**	**Assignment/ Tutorial**	**Method of Evaluation**
BPLN0511	Planning Lab - V (Local Area Planning)	9	9	0	0	Viva Voce
BPLN0512	Real Estate Planning and Management	4	0	3	1	Written
BPLN0513	Contemporary Urban Planning Practices	4	0	3	1	Written
Students have to select a minimum of three Subjects * from BPLN 0514 to 0519						
BPLN0514	Planning for Rural Settlements	3	0	3	0	Written
BPLN0515	Qualitative and Quantitative Techniques in Planning	3	0	2	1	Written
BPLN0516	Planning for Urban Informal Sector	3	0	2	1	Written & Viva Voce
BPLN0517	Urban Design and Landscape	3	0	3	0	Written& Viva Voce
BPLN0518	Advanced GIS in Planning	3	2	1	0	Written & Viva Voce
BPLN0519	Introductory Geology and Geo-hydrology	3	0	3	0	Written
	Total	**26**				

*** With an option to choose up to a maximum of 5 subjects**

THIRD YEAR : FIFTH SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
Planning Lab - V (Local Area Planning)	**BPLN0511**	Lecture, Guided Practice, Group Exercise	Viva Voce	9	9	Knowledge and Skill

Learning Objectives	**Subject Contents**	**Learning Outcome**	**Recommended Readings**
To impart necessary knowledge and skills to enable students: • appreciate the rationale for planning at local area level • define the local area • identify major socio – economic, physical, environmental and regulatory issues pertinent to revitalize local area • explain the steps in planning a environmentally sound self contained local area	**Unit 1: Understanding Local Area Planning** Local are planning: definition, significance and scope; Delineation of local area and preparation of base maps; Understanding the functional base and predominant land use of the local area; Envisioning the future through stakeholder consultation **Unit 2: Demographic and Socio Economic Survey** Household / demographic survey: sex ratio, literacy, dependency ratio, migrant population, occupational pattern, mode of transport, distance to work place, vehicle ownership **Unit 3: Physical Appreciation of Local Area** Location and setting; Accessibility and linkages; Natural water body and drain off; Environment attributes; Topography and vegetation; Existing land use and building use; Open and vacant spaces; Availability of physical and social infrastructure; Building attributes and conditions **Unit 4: Planning Imperatives** Issue identification and envisioning through stake holder consultations; Scope for redevelopment; Computation of existing density and building future scenarios: reference to DCRs and incentives **Unit 5: Preparation of Local Area Plan** Detailed lay out; Proposed infrastructural intervention, zoning guidelines and project formulation	Upon the completion, students would be able to: • delineate the local area • prepare base map of the local area featuring all physical elements • calculate population and dwelling densities • map the cultural and heritage attributes of the local area • collate land market information about the local area • carry out envisioning exercise with the stake holders • create various development options • prepare a local area plan	• Local Area Planning in India, Rishi Dev, CreateSpace Independent Publishing Platform, 2014 • Participatory Planning in Plan Preparation, Shashikant Nishant Sharma, SureShot POST Online Publishing, 2013 • GIS for Local Area Planning, Volume 1, Tony Winata and Hiran D. Dias, Asian Institute of Technology, 1991

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Real Estate Planning and Management	**BPLN0512**	Lecture, Guided Practice, Group Exercise	Written	4	4	Knowledge and Skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • define land economics and its scope • explain the impact of economic forces on urban structure and land use pattern • understand different segments of real estate sector • appreciate demand - supply gap • explain the methods of appraising a real estate project • explain the methods real estate valuation • explain the salient features of different policies and programmes on real estate development • explain the provisions under real estate statute	**Unit 1: Land as Resource** Land economics: definition, objectives and scope; Economic rent, land use and land values; Impact of economic forces on urban structure and land use pattern; Bid rent theory; Cities without land markets - use of land in socialist contexts; Regulatory frameworks determining land values and land uses **Unit 2: Real Estate Planning - Concepts and Techniques** Basis of real estate planning; Overview of real estate sectors- residential, commercial, retail, hospitality etc.; Real estate market analysis; Demand assessment and supply mapping; Competitive benchmarking **Unit 3: Financial Feasibility: Concepts and Computation** Time value of money; Concepts of cost inflation and price escalation; Components of project cost and basis of pricing of products; Compounding and discounting rates; Financial appraisal of real estate project; Rent capitalisation method; Product mix derivation; Phasing of construction and sales **Unit 4: Land & Property Valuations** Valuation of real property - principles and practices; Methods of context specific valuation: depreciation/ comparative / discounted cash flow/ development method; Private ownership and social control of land **Unit 5: Policies, Programmes and Statutory Interventions** Real estate development: regulatory provisions, Government policies and programmes; Land development charges and betterment levy; Land use restrictions and compensations; Urban land management and marketing techniques: bidding, reserve price, land reservation, land price subsidies	Upon the completion, students would be able to: • assess demand and supply and identify the gap • appraise a real estate project financially through standard methods • identify the cost components of real estate project • work out the basis of pricing of real estate products • carry out valuation of real estate through different standard methods • refer to relevant policies and programmes • refer to relevant clause of real estate statute	• Real Estate Principles, Charles J. Jacobus, Oncourse Learning, 2013 • Urban Land Economics, Jack Harvey and Ernie Jowsey, Palgrave Mcmillan, 2004 • Economics of Urban Property Markets: An Institutional Economics Analysis, Arvanitidis Paschalis, Routledge • Real Estate Finance: Theory and Practice, Terrence M. Clauretie and Others, Oncourse Learning, 2009 • Real Estate: Property Markets and Sustainable Behavior, Dent Peter and Others, Routledge, 2012 • Urban Economics and Real Estate Markets, Denise Di Pasquale and William C. Wheaton, Prentice Hall, 1995 • Real Estate Economics: A Point-to-Point Handbook, Nicholas G Pirounakis, Routledge, 2012 • Urban Planning and Real Estate Development, John Ratcliffe, Routledge, 2009 • Real Estate Finance in India, Prashant Das, Divyanshu Sharma, Sage, 2014 • Real Estate Management, Howard L. Bliss, Charles H. Sill, Prentice-Hall, 1953 • Real Estate Management, Rashed M Al Zoumah, lulu.com, 2011 • Real Estate & City Planning, Richard Lawrence and Others, Prentice-Hall,1957

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Contemporary Urban Planning Practices	**BPLN0513**	Lecture and Assignments	Written	4	4	Knowledge and skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • appreciate the rationale of contemporary urban planning practices • explain the salient features of different planning approaches • understand the contemporary urban programmes and schemes in India • appreciate the global urban agenda • understand the importance of technology and its application in urban planning	**Unit 1: Structure and Practice of Contemporary Urban Planning** Contemporary urban planning: the reform agenda, planning and politics, and social issues; Tools of land use planning; Smart growth; Energy planning **Unit 2: Urban Planning Approaches** Approaches to land regularization and management; Green field development; Brownfield development; Compact city development; Land pooling / Town Planning scheme; Inner city development; Participatory process and partnerships; New urban forms and new urbanism **Unit 3: Urban Planning Programmes and Schemes in India** Programmes and schemes in urban sectors in India: Smart Cities, AMRUT, HRIDAY, Housing for All, Total Sanitation Programme, RuRBAN Mission etc. **Unit 4: Future Global Agenda** New Urban Agenda, Sustainable Development Goals, Future cities **Unit 5: Technology and Urban Planning** Need for ICT and big data in urban planning; Intelligent cities and people: Case studies	Upon the completion, students would be able to: • select the most viable planning approach(es) • list the steps in scheme mapping and programme implementation • refer to the relevant clause of global urban agenda appreciate ICT application in urban planning	• Contemporary Urban Planning, John M. Levy, Pearson, 2013 • The Oxford Handbook of Urban Planning, Randall Crane and Rachel Weber, Oxford University Press, 2015 • Contemporary Urban Planning, John M. Levy, Routledge, 2012 • Urban Planning : Theory and Practice, M.P. Rao, CBS Publishers • Urban Planning Methods: Research and Policy Analysis, Ian Bracken, Routledge, 2007 • Making Strategic Spatial Plans: Innovation in Europe, Patsy Healey, Routledge, 1997 • Understanding Cities, A.R. Cuthbert, Routledge, 2011 • Smart Cities, A. Picon, John Wiley & Sons, 2015 • Creating Smart-er Cities, Mark Deakin (Ed.), Routledge, 2013 • Urban Development Debates in the New Millennium (Vol. 1 & 2), K.R. Gupta, Atlantic, 2005 • Urban Planning and the Development Process, David Adams, Routledge, 2005 • Urbanisation, Urban Sustainability and Future of Cities, B. Bhattacharya, Concept Publishers, 2010 • Spatial Planning: Strategies, Developments and Management, Elia Ciccotelli (Ed.), Nova Science Publishers Inc., 2012 • Urban Planning, Anthony J. Catanese and James C. Snyder, McGraw Hill Education (India), 2014 • Urban Planning in the 21st Century, Daniel S. Graber and Kenneth A. Birmingham, Nova Science, 2009 • Town Planning Scheme Mechanisms in India, Shirley Ballaney, Environmental Collaborative, Ahmedabad, 2010 • State Led Innovative Mechanisms to Access Serviced Land in India, Rejeet Mathews and Others, The World Resources Institute, India, 2016

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Planning for Rural Settlements	**BPLN0514**	Lecture and Assignments	Written	3	3	Knowledge

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • explain different features of a rural settlement • explain the architecture of rural governance • map the rural economic structure • explain the objectives of natural resource management at village level • assess the infrastructural need at village level	**Unit 1: Understanding the Rural Settlement** Demography, physiography and the socio - economic structure of rural settlements; Infrastructural profile of rural settlements; Constraints for rural development **Unit 2: Rural Economy** Rural livelihood and its diversification; Profiling rural economy; Increasing shift to rural non farm sector; Developmental challenges **Unit 3: Natural Resource Management** Soil conservation, wet land management flood plain zoning; Water management: rain water harvesting, watershed development; Integrated energy management- harnessing renewable energy; Forest resource management **Unit 4: Infrastructural Intervention** Community driven rights based development ; Rural marketing and mobility: the last mile distribution; Development of market and warehouse; Rural housing and sanitation **Unit 5: Rural Governance and Resource Envelope** Structure of rural governance; Powers and functions of gaon sabhas and gaon panchayat; Mapping rural development schemes	Upon the completion, students would be able to: • profile different features of a rural settlement • analyse the economic profile of a rural settlement • explain methods for natural resource management • plan for rural infrastructures	• Rural Development: Concept and Recent Approaches, Sujit Kumar Paul, Concept Publishing, 2015 • Rural Infrastructure, S.B. Verma and Others (Eds.), Sarup and Sons, 2008 • Village Information System for Development Planning, H.R. Yadav (Ed.), Concept Publishing, 2013 • Rural Development in the Era of Globalization, B. Suresh Lal, Serial Publications • Rural Housing: Policies and Practices, Bhaskar Majumder, Rawat Publications, 2007 • Rural Development In India: Retrospect and Prospect, Komol Singha, Concept Publishing Company, 2010 • Rural Resource Management , Paul J. Cloke (Eds.), Routledge, 2014 • Rural Development, Principles, Policies and Management, Katar Singh, Sage Publication, 2010 • Readers' Volume on Village Planning and Rural Development, A.Qaiyum, New Delhi, Institute of Town Planners, India, 2006 • Participatory Rural Appraisal : Methods and Applications in Rural Planning, Amitava Mukherjee, Concept Publishing Company, 2004 • Micro-level Rural Planning: Principles, Methods and Case Studies, R. P. Misra and R. N. Achyutha, Concept Publishing Co., 1990 • Introduction to Rural Planning, Nick Gallent and Others, Routledge, 2015 • Rural Development: Concept and Recent Approaches, Thomas William and A.J. Christopher, Rawat Publications, 2015 • Rural Livelihoods in India: Issues, Measurement and Policies, Biswajit Chatterjee (Ed.), Concept Publishing, 2015 • Rural Development in the Era of Globalisation, B. S. Lal and Others, (Eds.), Serial Publications, 2008

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Qualitative and Quantitative Techniques in Planning	**BPLN0515**	Lecture, Guided Practice, Group Exercise	Written	3	3	Knowledge and Skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • define and classify qualitative data • explain different approaches in examining qualitative data • explain different techniques of analysing qualitative data • explain the methods of hypothesis testing • establish the degree of relationship and causal relationship amongst a set of variables • explain the method and scope of factor analysis	**Unit 1: Qualitative Data Analysis** Qualitative data: nature and type; Qualitative data analysis approach: Inductive approach, Grounded theory approach, Phenomenological approach; Data measurement scale: nominal, ordinal, interval and ratio **Unit 1: Qualitative Data Collection Techniques and Tools** Data collection techniques: observation, interview (focused group discussion), rating, socio metric; Data collection tools: questionnaire, Likert scale, Thurstone scale, sociograms etc. **Unit 3: Hypothesis Testing** Formulation of hypotheses; Hypothesis testing: The Confidence Interval approach; Hypotheses testing : The Test of Significance Approach **Unit 4: Inferential Statistics: Simple Correlation and Regression** Degree of relationship amongst variables; Scatter diagram, coefficient of correlation; Rank correlation; Causal relationship between variables – methods of regression **Unit 5: Factor Analysis** Principal component analysis *N.B. Hands on training shall be arranged on statistical softwares for the statistical tools under Unit 3 to 5*	Upon the completion, students would be able to: • collect and tabulate qualitative data • process and interpret qualitative data • compute the degree of relationship amongst variables • measure the cause and effect relationship amongst the variables • formulate the hypotheses and undertake the test thereof • calculate the factor loading and construct composite index • construct the principal components use statistical softwares for various statistical tools	• Introduction to Qualitative Research, Uwe Flick, Sage, 2009 • Doing Qualitative Research, David Silvermann, Sage, 2010 • Designing Qualitative Research, C. Marshall, and G.B. Rossman, Sage, 2011 • Qualitative Data Analysis, Pat Bazeley, Sage, 2013 • Qualitative Methodology, Jane Mills and M. Birks, Sage, 2014 • Statistics, Murray R. Spiegel and Larry J. Stephens, Tata McGraw Hills, 2012 • Statistics for Management, Richard I Levin and David S. Rubin, Pearson, 2011 • Statistics, Spiegel Murray R., TMH, 2012 • Analysis of Multivariate Social Science Data, David J. Bartholomew, Chapman & Hall • Statistical Methods for Spatial Data Analysis, Schabenberger Oliver; Chapman & Hall • Statistical Techniques for Data Analysis, John K. Taylor and Cheryl Cihon, Chapman and Hall / CRC, 2004

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Planning for Urban Informal Sector	**BPLN0516**	Lecture, Guided Practice, Group Exercise	Written and Viva Voce	3	3	Knowledge and skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • define informal sector and its different variants • define and measure urban poverty • identify the hotspots of urban poverty • explain the infrastructural and institutional interventions for informal settlements and economy • appreciate the skill-livelihood synergy • understand the geography of urban informal economy	**Unit 1: Understanding Urban Informal Sector** Definition of informal sector; Different variants of urban informal activity; Segmentation and heterogeneity; Identification of vulnerable segments – child labourers, differently abled, old aged **Unit 2: Understanding Urban Poverty** Appreciating urban poverty – absolute and relative poverty; Poverty measurement; Cumulative deprivation of urban poverty; Mapping of urban poor **Unit 3: Supportive Infrastructure for Urban Informal Settlement and Economy** Securing occupational health and safety of informal sector employees; Social protection – social security and social insurance; Financial inclusion: promotion of micro credit and community thriftiness **Unit 4: Promoting Urban Informal Economy: Skill-Livelihood Synergy** Understanding the geography of informal occupations; Rationalising the space for informal activities; An overview of the regulatory statutes . Understanding skill – livelihood synergy; Skill mapping of urban informal community; Identification of skill gap - measures for skill formation and skill upgradation **Unit 5: Land and Informality** Spatial justice to urban informal economy – statutory allocation of urban land to urban informal activity; Identification of hot spots of urban poverty- ghettoisation; The economics of location of informal settlements	Upon the completion, students would be able to: • differentiate between different variants of urban informal activity • measure urban poverty index • map the hotspots of urban poverty • carry out skill mapping • list the crucial infrastructural and institutional support for urban informal sector • rationalise space for street vending	• Infrastructure for Poor People – Public Policy for Private Participation, Penelope J. Brooke • Informal Sector in Indian Economy: The Way Ahead, Dipa Mukherjee, Rawat Publications, 2009 • Urban Informal Sector in A Developing Economy, T. S. Papola, Vikas, 1981 • Urban Poor and Urban Informal Sector, Abdul Aziz, Ashish Publishing House, 1984 • The Urban Informal Sector in Developing Countries: Employment, Poverty and Environment , S. V. Sethuraman, International Labour Office Geneva, 1992

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Urban Design and Landscape	**BPLN0517**	Lecture, Guided Practice, Group Exercise	Written and Viva Voce	3	3	Knowledge and skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • define basic principles of urban design and landscape planning • explain urban form and scales of urban design and landscape • examine urban design theory and principles of built environment interpreting local and historical examples • critically look at built environment and social dimensions • appreciate architectural definition and delimitation of physical space • appreciate the significance of landscape in varied scale of spatial planning • explain the principles and techniques of landscape design with various elements • map topographical conditions of varied scales of urban area. • explain the water sensitive sustainable techniques for management of storm water to prevent urban flood	**Unit: 1 Introduction to Urban Design and Landscape Planning** Definition of urban design and landscape planning; Urban design and landscape planning as interface between architecture and planning; Basic principles of landscape planning; An overview of manmade landscapes in city morphology **Unit: 2 Elements of Urban Design** Understanding urban form through its elements; Similarity in elements of urban design and landscape for organization of spaces; Image of the city and its components; Urban transportation vis a vis urban design; Importance of landscape features in urban design **Unit: 3 Morphology of Urban Forms and Urban Design Guidelines** City as a three dimensional entity; Activity and morphology of places; Tangible and intangible aspects of city design; Universal values of urban design; Overview of urban design theories; Public realm of cities; Urban design and its control; Case studies of urban design **Unit 4: Landscape Planning: Scale and Design** Landscape at urban and regional level; Components and characteristics of urban open space patterns; Landscape design in relation to land- use, circulation networks and activity; Concepts of ecosystem services **Unit 5: Landscape Planning Methods, Processes and Sustainable Practices** Landscape planning: methods and processes; Site analysis with all its attributes; Relevance of plants types, vegetation to indigenousness; Modifying microclimate of a site through landscape design	Upon the completion, students would be able to: • evaluate the built environment in an urban setting • conceptualise and contextualise the urban design imperatives • list the urban design parameters for specific places • propose design interventions for shaping public realm • evaluate and assess spatial issues pertaining to landscape planning propose realistic design interventions using landscape as a tool to mitigate the urban flood issues	• Urban Design, Tridib Banerjee (Ed.), Routledge • Urban Design, Ed Wall, Ava Academia • World Cities and Urban Form, Mike Jenks and Others (Eds.), Routledge, 2008 • Urban Design as Public Policy: Practical Methods for Improving Cities, Jonathan Barnett, Architectural Record • Urban Design Futures, Malcolm Moor (Ed.), Routledge • Urban Design Management: A Guide to Good Practice, Antti Ahalva (Ed.), Taylor and Francis • Urban Design: Method and Techniques, Cliff Moughtin, Architectural Press • Landscape Ecology in Theory and Practice: Pattern and Process, Monica G. Turner, Springer • Urban Pattern: City Planning and Design, Arthur B. Gallion, CBS Publishers and Distributors, 2005 • Basics Landscape Architecture: Urban Design, Ed Wall and Tim Waterman, AVA Publishing, 2009 • Landscape Analysis and Planning: Geographical Perspectives, M. Luc, U. Somorowska and J.B. Szmanda, Springer, 2015 • Landscape and Urban Design for Health and Well-Being, Gayle Souter Brown, Routledge, 2014 • Urban Design Guidance, Thomas Robert Cowan, Telford Publishing, 2002

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Advanced GIS in Planning	BPLN0518	Lecture, Lab Exercise Guided Practice, Group Exercises	Written and Viva Voce	3	3	Knowledge and Skill

Learning objectives	Subject content	Learning outcome	Recommended Readings
To inculcate the knowledge and skills so as to enable the students to: • understand various tools available in GIS to map large data sets • create 3D data of terrain • apply network analysis using network dataset • understand &interpret hydrology of an area • analyze patterns using different techniques of advanced geo-spatial analysis	**Unit 1: Review of GIS & 3D Mapping Techniques** Review of Coordinate systems and Projections, Spatial Data Models, geo-processing tools and mapping techniques, raster data analysis; Multi-platform data handling- Conversion of GIS data to CAD format and vis-a-vis; 3D mapping techniques in Arc Scene. **Unit 2: Spatial Analysis and Related Mapping Techniques** a. Location Analysis: suitability analysis, vulnerability analysis, hotspot analysis, Application of near tool, shadow analysis; b. Identifying pattern: supervised and unsupervised classification, review of indices, Digital change detection. **Unit 3: Hydrology** Application of flow direction & flow accumulation techniques, basin and watershed delineation, extraction of stream network and stream order. **Unit 4: Network analysis** About network, creating network dataset, basic network analysis, creating multi-modal network dataset, advanced network analysis- shortest path method, best route, the utility network analyst. **Unit 5: Automation and Basic programming** Model Builder: Creating a model in Graphical User Inter-phase (GUI), expanding capabilities; Introductory programming	Upon the completion, students would be able to: • prepare 3D maps • carry out data conversion between Q GIS, Arc GIS and CAD • perform hotspot analysis & shadow analysis • prepare map showing vulnerability • prepare change detection maps • prepare hydrology maps • perform network analysis • create model in GUI	• Remote Sensing and Image interpretation by Thomas Lillesand, Ralph Kiefer., Wiley publication. • Concepts and Techniques of Geographic Information Systems by Chor Pang Lo; Prentice-Hall of India Private Ltd. • Getting to know ArcGIS Desktop by Tim Ormsby; ESRI Press. • Mastering ArcGIS by Maribeth Price; McGrawHill. • QGIS User Guide, www.qgis.org

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Introductory Geology and Geo-hydrology	**BPLN – 0519**	Lecture and Assignments	Written	3	3	Knowledge and Skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • describe the composition of earth • explain the tectonic behaviour • explain geologic cycles and rock weathering • explain the geology of soil • classify landforms • explain the theory of groundwater • interpret Indian stratigraphic sequences	**Unit 1: Introductory Physical Geology** Composition of the earth and its exterior (hydrosphere, atmosphere and biosphere); Concept of land form, climate and weather; Concept of plate tectonics and continental drift ; Tectonic behaviour and seismic belts (seismic zoning in India) **Unit 2: Fundamentals of Geology** Geologic cycles – dynamic transitions through geologic time among the rock; Rock weathering, Geological action of rivers and glaciers; Rock types and their character – bedding, outcrop and strikes; Soils – processes of formation, soil profile and soil types **Unit 3: Fundamentals of Geomorphology** Geomorphic classification and Evolution of landforms; Geomorphic cycle and their interpretation; Evolution of typical geomorphic features of India; Description and classification of folds, faults, joints, unconformities, fault planes; Land form types; Landslides, instability of hill slopes and its prevention **Unit 4: Fundamental of Geohydrology** Hydrologic cycle and its components; Introduction to surface and ground water; Groundwater bearing properties of different lithological formations; Ground water in igneous, sedimentary and metamorphic rocks; Theory of groundwater flow; Groundwater level fluctuations; Water balance studies; Concept of watershed management **Unit 5: Geological Data and Their Applications** Types of preliminary geological data related to Indian stratigraphic sequences; Use of geological data for human settlement ; Soil bearing capacity for different types of construction	Upon the completion, students would be able to: • recall the seismic zones of India • use the stratigraphic records • identify soil by its profile • make preventive plan against landslides • workout water balance studies • list the steps in watershed management • identify built environment compliant suitable land form	• Geology: A Complete Introduction, David Rothery, Teach Yourself Kindle edition, 2015 • Introduction of Physical Geology, A.K. Datta, Kalyani Publishers, 2010 • Earth: An Introduction to Physical Geology, Edward J.Tarbuck and Others, Pearson Education India, 2016 • Introduction to Hydrology, Warren Viessman and Gary L. Lewis, Pearson Education, 2012 • A Text Book of Geology, G.B. Mahapatra, CBS, 2009 • Foundation of Geology, S.B. Bhagwat, Global Vision Publishing House, 2013 • Applied Geology, D.V. Reddy, Vikas Publishing House, 2010 • A Text Book of Geology, P.K. Mukerjee, The World Press Private Limited, 2010 • Fundamentals of Geomorphology, Richard John Huggett, Routledge, 2011 • Groundwater Hydrology: Conceptual and Computational Models, Wiley India Pvt. Ltd,

Third Year – Sixth Semester

Third Year : Sixth Semester						
Subject Code	**Name of Proposed Subjects (Six)**	**Credits**	**Lab**	**Lecture**	**Assignment/ Tutorial**	**Method of Evaluation**
BPLN0611	Planning Lab - VI (Urban Planning)	9	9	0	0	Viva Voce
BPLN0612	Urban Governance and Management	4	0	3	1	Written
BPLN0613	Introduction to Detailed Project Report	4	0	3	1	Written
Students have to select a minimum of three Subjects* from BPLN 0614 to 0618						
BPLN0614	Climate Change Resilient Planning	3	0	3	0	Written
BPLN0615	Urban Redevelopment	3	0	2	1	Written
BPLN0616	Water Resources Management	3	0	3	0	Written
BPLN0617	PPP in Urban Development	3	0	3	0	Written
BPLN0618	Disaster Risk Management	3	0	2	1	Written
	Total	**26**				

*** With an option to choose up to a maximum of 5 subjects**

Students would proceed for Planning Internship after the end semester examination of sixth semester

THIRD YEAR : SIXTH SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
Planning Lab - VI (Urban Planning)	**BPLN0611**	Lecture, Guided Practice, Group Exercise	Viva Voce	9	9	Knowledge and Skill

Learning Objectives	**Subject Contents**	**Learning Outcome**	**Recommended Readings**
To impart necessary knowledge and skills to enable students: • synthesize knowledge and skills obtained in the core courses in planning in order to prepare a plan for an urban settlement • get involved in a practicum to understand the association amongst land, demography, environment, economy and equity in an urban settlement • formulate alternatives planning interventions	**Unit 1: Regional Setting of Urban Area** Regional setting of the urban area; Locational attributes of the urban area **Unit 2: Review and Delineation of Planning Area** Studying the urban growth directions; Understanding the typology of the urban settlement; Spatial manifestation of sectoral policies; Delineating the planning area **Unit 3: Mapping of Urban Scenario** Preparation of data checklist; Collection, compilation and tabulation of data Conducting various urban surveys: transport, housing, socio-economic etc; Review of existing land use allocation across urban functions; Review of existing DCRs **Unit 4: Envisioning Exercise** Demographic and economic projections; Stakeholder consultation for envisioning the future; Determination of planning approaches **Unit 5: Development Proposals** Sector wise development proposals; Preparation of revised land use	Upon the completion, students would be able to: • delineate the planning area • prepare base map of the planning area featuring all physical elements • undertake demographic and economic projection • map the natural resources and the cultural & heritage attributes of the planning area • carry out envisioning exercise with the stake holders • develop the sector wise development proposals	• Urbanisation in India: Challenges, Opportunities and the Way Forward, Isher Judge Ahluwalia and Others (Ed.), Sage India, 2014 • Urbanisation and Urban Systems in India, R. Ramchandran, Oxford University Press, 2012 • Handbook of Urbanisation in India, K.C. Sivaramakrishna and Others (Eds.), Oxford University Press, 2011 • The Urban Pattern: City Planning and Design , Arthur Gallion and Simon Eisner, Van Nostrand Reinhold, 1986 • Spatial Planning and Urban Development: Critical Perspectives, Palermo Pier Carlo, Springer, 2010 • Urban Pattern: City Planning and Design, Gallion, Arthur B., New Delhi CBS Publishers, 2005 • URDPFI Guidelines (Volume I and II), Ministry of Urban Development, Government of India, 2015 • Urban Planning, T. B. Levent, (Ed.), Cheltenham Edward Elgar Publishers, 2008 • Planning and Urban Change, Stephen V. Ward, London Sage, 2004 • Concept Mapping for Planning and Evaluation, Mary Kane William and M. K. Trochim, Sage Publications, 2007 • Land Use Planning: Techniques of Implementation, Theodore William Patterson, Van Nostrand Reinhold, 1979 • Sustainable Urban Planning, Joy Sen, The Energy and Resources Institute, 2012 • Environmental Consciousness and Urban Planning, Mahesh N. Buch, Stosius Inc/Advent Books Division, 1993

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Urban Governance & Management	**BPLN0612**	Lecture and Assignments	Written	4	4	Knowledge

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • explain the organisational structure and powers and functions of municipalities in India • explain the roles and responsibilities of non municipal institutions in urban governance and management • explain the indicators of good governance • appreciate the significance of service level benchmarking and citizens' charter • underscore the relevance of corporatization of municipal services • define the different types and structures of decision making • explain the significance of participatory planning	**Unit 1: Architecture of Urban Governance** Organogram of a municipality; Executive mayor vs elected mayor; Functions of Standing Committee, Finance Committee; Powers and functions of municipality **Unit 2: Non Municipal Institutions and Participatory Urban Management** Organizational structure, powers and functions of various national, state, regional, district and local level organizations involved in urban development in India (para statal agencies, departments, boards and commissions, public undertakings, committee / sabha etc.); Participatory planning: history and significance, methods of participation; Institutional arrangement for public participation: Participatory Learning and Action (PLA) **Unit 3: Good Governance** Indicators of good governance; e-municipal governance; Report card system; Citizens' Charter; Social audit; Governance index **Unit 4: Managing Urban Development** Service level benchmarking; Improving of delivery of services; Corporatisation of urban services; Convergence of urban programmes; Service authority versus service provider; Selection of service provider **Unit 5: Decision Making** Decision-making: definition, factors, essentials and hindrances in sound decision-making; Structure of decisions and types of decisions; Theories of decision-making: an overview of rational theory, incremental theory, systems theory, game theory and conflict theory	Upon the completion, students would be able to: • refer the municipal organogram and relate the municipal functions with functionaries • relate any urban service to the concerned para statal bodies • measure the governance index • benchmark municipal services • draft a citizens' charter • list the steps in corporatizing a municipal service • list the steps in selecting a municipal service provider • list the salient features of different decision making theories • conduct a PLA exercise	• Urban Governance and Management: Indian initiatives, P.S.N. Rao (Ed.), Kanishka Publishers, 2006 • Local Governance in India – Niraja Gopal and Others, Oxford University Press, 2001 • India: The Challenges of Urban Governance, O.P. Mathur, National Institute of Public Finance & Policy, New Delhi, 1999 • Governance and Planning of Mega-City Regions: An International Comparative Perspective, Jiang Xu, Routledge, 2011 • Urban Management: Challenge of Growth, Kenneth Davey, Avebury • Methods for Community Participation, S. Kumar, Vistaar Publications, 2011 • Urban Local Self-Government in India, R. N. Prasad, Mittal Publication, 2006 • New Forms of Urban Governance in India: Shifts, Models, Networks and Contestations, I.S.A. Baud, (Ed.), New Delhi,Sage, 2008 • Fiscal Decentralisation and Governance in India:, A Cross Country Analysis, De Mello, IMF Working Paper, 2001 • Cities and Public Policy, P.K. Mohanty , Sage, 2014

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Introduction to Detailed Project Report	**BPLN0613**	Lecture, Assignments	Written	4	4	Knowledge and Skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • define the variables of project identification • explain project scoping • list the various cost components of a project • understand importance of specification, costing and valuation • explain different methods of estimation • explain different methods of valuation • understand contents of schedule of rates • give an overview of various types of feasibility studies	**Unit 1: Project Identification** Project identification; Project description; Project scoping; Project costs: cost of land acquisition and site development, cost of surveys, cost of statutory compliances, cost of R&R and utilities shifting and cost of construction; Contents of a DPR **Unit 2: Specifications** Specifications for building and support services: site development and earth works; Water supply network and distribution systems; Sewerage systems; Electrical and telephone networks; Landscaping; Roads; Pathways; **Unit 3: Estimation & Costing of Buildings** Methods of building estimates and costing: Estimate of a masonry platform; Estimate of a single room building with verandah; Line plan of building; Estimate of a building from line plan; Estimate of R.C.C slab; Estimate of R.C.C beam; Estimate of R.C.C column with foundation; Rates: sources of rates; Cost index; Concept of cost escalation **Unit 4: Estimation & Costing of Roads and Basic Services** Estimate of sanitary works: septic tank, soak pit; Estimate of surface drain and water supply pipe line, sewer line; Estimate of earth work; Estimate of a metalled, CC and RCC road **Unit 5: Recommendatory Requirements** Design of proformas; Preparation of checklists for component wise requirement: land title, beneficiary identification, conformity to existing development plan; An overview of technical feasibility, financial sustainability, environmental compatibility, socio political acceptability, legal and regulatory conformity	Upon the completion, students would be able to: • prepare the contents of a DPR • list different types of building materials & works • specify different physical and functional aspects of a building • prepare cost estimates for buildings • prepare cost estimates for building support services • prepare the checklists for component wise requirements list the various statutory requirements for an urban development project	• Estimating Construction Costs: A Conceptual Approach, Collier Keith Reston, Prentice Hall • Estimating Costing and Building Economics for Architects, Harbhajan Singh, Abhishek Publications • Estimating, Costing and Valuation: Professional Practice and Quantity Surveying, S. C. Rangwala, Charotar • Publishing House • A Practical Guide to Project Planning, Celia Burton and Norma Michael, Nichols Publishing Company, 1994 • Estimating and Costing in Civil Engineering: Theory and Practice: Including Specifications and Valuation, B.N. Dutta, UBS Publication, 2007 • A Text Book on Estimating, Costing (Civil) and Civil Drawings, D.D.Kohli, Ramesh Publications, 1962 • Practical Guide to Project Planning, Ricardo Viana Vargas, CRC Press, 2007 • JnNURM DPR – Preparation Toolkit, Ministry of Urban Development, Govt of India, 2006

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Climate Change Resilient Planning	**BPLN0614**	Lecture, Case study method Assignments dovetailed to studio exercise	Written	3	3	Knowledge and skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • understand basic concepts of climate change and to make students aware of the scenario of climate change • provide exposure on discussions happening at national and international levels so as to find ways of integrating it in various stages of settlement planning • know the significance of climate change resilience of cities in addition to adaptation and mitigation strategies and finding ways to incorporate all these in development planning.	**Unit 1: Understanding Climate Change in Human settlements** Basics of climate science; Climate change and its linkages with human settlements; Causes of climate change and its impact on human settlements **Unit 2: Mitigation and Low Carbon Development** Introduction to mitigation and low carbon development; Understanding applicability of strategic framework and policy approaches for mitigation in planning for settlements with emphasis on integration of climate change policies in development planning process at local level; Global / Indian best practices **Unit 3: Adaptation Strategies** Importance of adaptation in preparing and coping with climate change; Key elements of vulnerability and climate risk assessment; Discussion on case examples **Unit 4: Climate Change Resilience** Key dimensions of resilience; Building climate resilient cities; Building resilience of cities through understanding applicability of adaptation strategies to reduce impacts of climate change through discussion on case studies **Unit 5: International and National Covenants** Understanding the implications of International and National frameworks, agreements, declaration and environmental finance mechanism	Upon the completion, students would be able to: • appreciate the role of settlements in climate change mitigation • address impacts of climate change through application of adaptation strategies and will be able to contribute in planning for low carbon and climate resilient development	• Climate Change – Causes, Effects and Solutions, Hardy T John, Wiley, 2003 • Climate Change - An Indian Perspective, Sushil Kumar Dash, CEE, 2007 • Adapting Cities to Climate Change, Jane Bicknell and Others, Earthscan, 2010 • Climate Change and Global Sustainability: A Holistic Approach , Akimasa Sumi and Others (Eds.), UNU 2011 • Climate Change and Sustainable Cities, Priemus Hugo and Simin Davoudi, Routledge, 2014 • Climate Change and New Challenges: Society, Environment and Development, Vir Singh and G. S. Kushwaha, Concept Publishing Company ,2012 • Climate Change in Asia and The Pacific: How Can Countries Adapt?, Venkatachalam Anbumozhi (Ed.), Sage • Climate-Resilient Development: Participatory Solution From Developing Countries, Astrid Carrapatoso (Ed.), Routledge • Climate Change 2007: Impacts, Adaptation and Vulnerability: Contribution of Working Group-II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, M. Parry and Others, Cambridge University Press https://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4_wg2_full_report.pdf • Climate Change, Adaptation Capacity and Development, Joel B. Smith and Others, Imperial College Press, 2003 • Climate Change in India, P.R. Shukla and Subodh K. Sharma, Universities Press (India), 2003 • Resilient Cities: Cities and Adaptation to Climate Change, Konrad Otto-Zimmermann (Ed.), Springer, 2012 • Climate Resilient Development, Astrid Carapatoso and Edith Kurzinger, Routledge, 2014 • Spatial Planning and Climate Change, Elizabeth Wilson and Jake Piper, Routledge, 2010 • Water, Food, Energy and Climate Nexus: Challenges and An Agenda for Action, Felix Dodds, Routledge

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Urban Redevelopment	**BPLN0615**	Lecture, Guided Practice, Group Exercise	Written	3	3	Knowledge and skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • define urban redevelopment, renewal, regeneration, reconstruction and the distinction thereof • explain the economic and spatial implication of urban renewal programmes • appreciate both the tangible and intangible aspects of redevelopment and conservation • appreciate the imperatives of slum improvement plans • explain the salient features of different statutory provisions for conservation and redevelopment	**Unit 1: Introduction** Urban redevelopment / renewal /reconstruction / regeneration – definitions and distinctions; Urban redevelopment as a part of urban plan; Identification of areas to be redeveloped; Conservation, rehabilitation and redevelopment – the interrelationship **Unit 2: Economic, Financial and Management Aspects** Economic and spatial implications of urban renewal programs; Mobilization of resources; Urban renewal through Incentive zoning **Unit 3: Urban Conservation and Development** Understanding the context of both built heritage and historic neighbourhoods; Conservation: socio-economic and traffic management aspects; Redevelopment of brown fields; Heritage conservation - case studies **Unit 4: Housing Redevelopment** Issues of old, dilapidated, vacant stock; Infrastructure inserts in old city area and augmentation of services; land management; FSI utilisation and re-densification/de-densification issues; socio- economic issues; gentrification and de-gentrification; public participation; Convergence of government schemes **Unit 5: Legal and Administrative Aspects** Implementation of urban renewal programs – an overview of national and international experiences; Legal and administrative aspects: archaeological acts/ charters and institutional mechanism in urban redevelopment and conservation in India	Upon the completion, students would be able to: • identify the built forms, land parcels and historic neighbourhoods for redevelopment • assess the form, extent and direction of planning interventions for redevelopment • workout a planned layout for the existing slums • refer to the statutory provisions for redevelopment	• Urban Planning and Development Process in Renewal, D. Adams, UCL Press, London, 1994 • Re-visioning Indian Cities: The Urban Renewal Mission, K. C. Sivaramakrishnan, Sage, 2011 • Urban Renewal: Theory and Practice, Chris Coch, Palgrave Macmillan, 1990 • Urban Redevelopment, N. Balakrishna Reddy, Concept Publishing Company, 1996 • The Politics of Urban Redevelopment, Ajay K. Mehta, Sage Publications, 1991 • Reclaiming the Urbanism of Mumbai, Kelly, Shannon (Ed.), Super Books, 2009 • Urban Redevelopment: Past and Present, Kevin Fox Gotham, Volume 6, Elsevier Science Ltd., 2001 • Urban Redevelopment: A Study of High-rise Buildings, K. Narayan Reddy, Concept Publishing Co., 1996 • Urban Redevelopment, Displacement and the Future of the American City, C. Thodore Koebel, Community Affairs Office, 1996 • Global Gentrifications: Uneven Development and Displacement, Lees Loretta (Ed.), Policy Press, 2015 • Innovations in Collaborative Urban Regeneration, Horita M. Koizumi .(Ed.), Springer, 2009 • Urban Regeneration in The UK: Boom, Bust and Recovery, Jones Phil, Sage, 2013 • Contested Metropolis, Paloscia Raffaele (Ed.) and INURA, Birkhauser, 2004 • Sensing Cities: Regenerating Public Life in Barcelona and Manchester, Degen Monica Montserrat, Routledge, 2008 • Cityscapes and Capital: The Politics of Urban Development, Michael A. Pagano, John Hopkins University Press, 1997 • Urban Development Debates in the New Millennium, K. R. Gupta and Prasenjit Maiti, Atlantic, 2005 • Heritage and Urban Renewal, Intach, Aryan Books International, New Delhi, 2014

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Water Resources Management	**BPLN0616**	Lecture and Assignments	Written	3	3	Knowledge and skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • appreciate the rationale water resource management • explain the reasons behind water stress and crisis • explain the legislative and institutional interventions in urban water management • analyse the water management issues from different perspectives • explain the salient features of different water management strategies	**Unit 1: Introduction** Sources and Uses of water (primary, secondary and tertiary sector uses); Concept of virtual water; Health and environmental concerns of availability and quality of water resources **Unit 2: Crisis in Water Resources** Water crisis and water stress; Protection of aquifers; Water rights and its legal implications; Politics of water sharing **Unit 3: Legislation on Water** Statutes governing water resources; Legislation for preventing water pollution; Institutions managing water resources **Unit 4: Water Resource Augmentation** Infrastructure for annual and multi-year flow regulation, multi-purpose storage; Protection of water quality and water source; An overview of dam projects; desalination techniques; modern water augmentation techniques **Unit 5: Water Management Strategies** Integrated surface and ground water management from socio – economic and techno – environmental perspectives; An overview of inter territorial water sharing; Water demand management, Water conservation measures; An overview of water trading, security, auditing and pricing	Upon the completion, students would be able to: • profile the scenario of water critical urban habitat • refer to the statutory provisions of preventing water pollution • assess the techno - environmental and socio-economic aspects of surface and ground water management • list the demand and supply side management of urban water • interpret the dynamics of water trading and water pricing	• Water Resources Planning and Management, R. Quenth Grafton and Karen Hussey, Cambridge University Press, 2011 • Geography of Water Resources, R.K. Gurjar, Rawat Publications, • Water Resource System Planning and Management, Sharad Kumar Jain and Vijay Pratap Singh, Elsevier, 2012 • Water Resources Management: Principles, Regulations, and Cases, Neil S. Grigg • Water Resources and Development, Clive Agnew and Philip Woodhouse, Routledge, 2011 • Role of Technology in Water Resources Planning and Management, Perez, Elizabeth M. (Ed.),Virginia ASCE , 2009 • Integrated Water Resources Management, Miguel A. Marino, International Association of Hydrological Sciences, 2001 • Adaptive Water Resource Management Handbook, Mysiak, J. (Ed.), London, Earthscan, 2010 • Water Law, Poverty and Development: Water Sector Reforms in India, Cullet Philippe, Oxford University Press, • Water Management, Covington Gareth, Apple Academic • Water Management in India, P. C. Bansil, Concept Publishing, • Water Policy Processes in India: Discourses of Power and Resistance, Vandana Asthana, Routledge • Water Reclamation and Sustainability, Satinder Ahuja, Elsevier, • Water Resource Management, Sawalia Bihari Verma, Pentagon Press, • Water Resources and Development, Agnew, Clive, Routledge, • Water Scarcity, Livelihoods and Food Security: Research and Innovation for Development, Larry W. Harrington, Routledge.

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
PPP in Urban Development	**BPLN0617**	Lectures, Case Study Method, Guided practice, Assignments and	Written	3	3	Knowledge and Skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • explain the salient features of urban services • justify the indispensability of PPP • explain the various forms of PPP and their relative advantages and disadvantages • appreciate the advantages of collaboration • explain the cardinal principles of PPP • explain the finance framework under PPP	**Unit 1: PPP in Urban Development** Salient features of urban services; PPP – indispensability; PPP – risk profile, constraints and preconditions; Overview of best PPP practices in urban development **Unit 2: PPP – Various Forms** Various forms of PPP – management contract, service contract, lease, divestiture and concessions; Strengths and weaknesses of each form of PPP **Unit 3: Promoting PPP** Advantages of collaboration; Methods of promoting effective participation **Unit 4 : PPP – Principles and Guidelines** Cardinal principles in PPP; Regulations and guidelines for PPP; Development of project proposal; Due diligence process; Competitive bidding process and documentation (EOI, RFQ, PIM, DCA, RFP); Regulatory authority; Transaction Adviser; Survey of PPP policies **Unit 5 : Financing PPP projects** Bankability of PPP project; Equity investment; Refinancing; Sources of PPP funding	Upon the completion, students would be able to: • profile the risk, constraints and preconditions of PPP projects • evaluate a PPP project • list the steps in the development and implementation of PPP projects • workout the bankability of a PPP project	• Public Private Partnership in Infrastructure, Yogendra Sharma, Vitasta, 2008 • Public Private Partnership in Infrastructure: Perspectives, Principles, Practices, R. N. Joshi, Vision Books • Public-Private Partnership Projects in Infrastructure: An Essential Guide for Policy Makers, Jeffreyrs Delmon, Cambridge University Press • Public-Private Partnerships, G. Ramesh (Ed.), Routledge • Public Private Partnerships Approach, Rakesh Ranjan, Adhyayan Publishers • Public-Private Partnerships for Urban Water Utilities: A Review of Experiences in Developing Countries, Philippe Marin, World Bank • PPP in Urban Infrastructure: Case Studies, Ministry of Urban Development, Ernst & Young Pvt. Ltd. 2010 • Policy, Management and Finance for PPP, Akintola Akintoye and Others, John Wiley & Sons, 2012 • Public-Private Partnership in Urban Development, Girish Kumar and Guru Charan Mathur, Intellectual Book Corner, 1997 • Urban Models and Public-Private Partnership, Remo Dalla Longa (Ed.), Springer-Verlag Berlin Heidelberg, 2011 • Public Private Partnerships: A Global Review, Akintola Akintoye and Others (Eds.), Routledge, 2015

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Disaster Risk Management	**BPLN0618**	Lecture and Assignments and Case Study Method	Written	3	3	Knowledge and skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • define disaster and its types • define the distinction amongst disaster risk, vulnerability and hazard • explain the salient features of existing statutes and policy on disaster management • explain the institutional mechanisms in India for disaster risk management • appreciate different disaster risk mitigation and management practices • underscore the role of land use planning and building bye laws in disaster risk management • explain the objectives of different types of mapping in disaster risk management • explain the planning interventions required for post disaster management • explain the disaster related regulations for special areas	**Unit 1: Disaster Management : Definition, Types and Policy Intervention** Disaster: definition and types; Disaster risk, vulnerability, hazards; National Disaster Management Act 2005; National Disaster Management Policy 2009; Sendai Framework for Disaster Risk Reduction 2015 **Unit 2: Disaster Management: Institutional Mechanisms** Disaster management : select global practices; Institutional set up for disaster management in India: NDMA, NIDM, and state / district level agencies; Agencies engaged in disaster management : NGOs / CBOs, NDRF; Community Based Disaster Preparedness (CBDP) **Unit 3: Disaster Risk Mitigation** Disaster risk mitigation and management practices: for cyclones, floods, earthquakes, landslides etc.; Disaster mitigation and management practices: for industrial, chemical and biological disasters; Disaster risk mitigation and management practices: land use planning, building bye laws and disaster compliant building design **Unit 4: Disaster Preparedness** Forecasting and early warning systems for various types of disasters; Communication and information technology in disaster management; Disaster education and awareness; Documentation of disasters; Mapping in disaster management : resource map, social map, vulnerability map and opportunity map **Unit 5: Post Disaster Management and Cross Cutting Issues** Rehabilitation and reconstruction of disaster affected areas; Natural resource management for disaster prone areas	Upon the completion, students would be able to: • refer to and relate with the clauses of NDM Act • propose disaster sensitive land use plan • recommend disaster compliant building bye laws • create resource / social / vulnerability / opportunity map • prepare disaster vulnerability index	• Displaced by Disaster: Recovery and Resilience in A Globalizing World, Ann-Margaret Esnard, Routledge • Disaster Recovery, Brenda D. Phillips, CRC Press • Cities, Disaster Risk and Adaptation, C. Wamsler, Routledge, 2014 • National Disaster Management Plan, Govt. of India, 2016 • National Policy on Disaster Management, Govt. of India, 2009 • Disaster Management, Vinod K. Sharma (Ed.), Scientific International, New Delhi • Disaster Management Through Panchayati Raj, Kamal Tayori, Concept Publishing Company, New Delhi • Disaster Management Handbook, Jack Pinkowski, (Ed.), CRC Press, 2008 • Disaster Risk Management: Conflict and Cooperation, Suman Ranjan Sensharma and Atanu Sarkar, Concept Publishing Company, 2013 • Learning From Disaster: Risk Management After Bhopal, Sheila Jasanoff, University of Pennsylvania Press, 1991 • Disasters and Public Health: Planning and Response, Bruce W. Clements, Elsevier, 2009 • Disaster Risk Management Systems Analysis: A Guide Book, Food and Agriculture Organization, 2008 • Managing Disaster Risk in Emerging Economies, Alcira Kreimer and Margaret Arnold (Eds.), World Bank Publications, 2000 • Community-Based Disaster Risk Reduction, Rajib Shaw, Emerald Group Publishing Limited, 2012

Fourth Year – Seventh Semester

Fourth Year : Seventh Semester						
Subject Code	**Name of Proposed Subjects (Six)**	**Credits**	**Lab**	**Lecture**	**Assignment/ Tutorial**	**Method of Evaluation**
BPLN0711	Planning Lab – VII (Projectisation of Urban Development Plan)	9	9	0	0	Viva Voce
BPLN0712	Thesis Programming	4	3	1	0	Viva Voce
BPLN0713	Planning Colloquium and Seminar	2	2	0	0	Viva Voce
BPLN0714	Planning Internship	2	-	-	-	Viva Voce
Students have to select a minimum of three Subjects* from BPLN 0715 to 0719						
BPLN0715	Planning for Special Areas	3	0	2	1	Written
BPLN0716	Municipal Finance	3	0	2	1	Written
BPLN0717	Advanced Transportation Planning	3	0	2	1	Written
BPLN0718	Public Policy Analysis	3	0	2	1	Written
BPLN0719	Logistics Planning and Management	3	0	2	1	Written
	Total	**26**				

*** With an option to choose up to a maximum of 5 subjects**

FOURTH YEAR : SEVENTH SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
Planning Lab - VII (Projectisation of Urban Development Plan)	**BPLN0711**	Lecture, Guided Practice, Group Exercise	Viva Voce	9	9	Knowledge and skill

Learning Objectives	**Subject Contents**	**Learning Outcome**	**Recommended Readings**
To impart necessary knowledge and skills to enable students: • explain the project formulation process • underline the importance of project management • explain the process and constraint in formulating a project • explain the various types of project feasibility • explain the project planning process • appreciate the importance of project resource management	**Unit 2: Project Identification** Sector wise project identification; Project formulation: process and constraints **Unit 2: Project Formulation and Appraisal** Project feasibility: types and components; Project appraisal: financial and economic; Ascertaining project costs and benefits; Financial appraisal techniques – payback period, benefit cost ratio, net present value, internal rate of return; Social cost benefit analysis (an overview) **Unit 3: Project Costing** Cost analysis and phasing of proposed interventions; Institutional mechanisms, legislative framework and management plans **Unit 3: Project Planning** Project planning process; Planning for project work (work breakdown structure); Planning for manpower and organisation; Planning for information system; Breakeven analysis; Cost performance / Schedule performance / Project performance index; Cost overrun; Project budgeting **Unit 5: Project Resource Management** Resource management: resource loading and resource levelling; Project reporting; Project cash flows: elements, principles, estimation; Financial closure	Upon the completion, students would be able to: • list the steps in project formulation • carry out financial appraisal of a project through various methods • estimate the breakeven point • calculate CPI, SPI, PPI and cost overrun • carry out resource loading and resource levelling • estimate project cash flow	• Challenges for a Mega City, U.S. Jolly, Concept Publishing, 2010 • Costs and Challenges of Local Urban Services, K.S. Sridhar and O.P. Mathur, Oxford University Press, 2009 • Urban Complexity and Spatial Strategies: Towards A Relational Planning, Patsy Healey, Routledge, 2007 • Urbanization and Urban Planning in India: Vision and Reality, R. N. Dubey (Ed.), New Delhi Shree Nataraj, 2010 • Projects: Planning, Analysis, Selection, Financing, Implementation and Review, Prasanna Chandra, TMH • Project Management Simplified: A Step-By Step Process, Barbara Karten, CRC Press • Project Management in Construction, Anthony Walker, Wiley Blackwell • Project Management, S. Choudhury, Tata Macgraw Hill, 2011 • Project Management: A Managerial Approach, Jack R. Meredith and Samuel J. Mantel, Wiley India, 2013 • Project Management: Theory and Practices, Gary L. Richardson, CRC Press, 2011 • Project Planning, Scheduling and Control, James P. Lewis, Tata Mcgraw Hill, 2011

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Thesis Programming	**BPLN0712**	Lecture, Guided Practice, Group Exercise	Viva Voce	4	4	Knowledge and skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • familiarize with the skills necessary to conduct research • appreciate the definition of research and its types • distinguish between inductive and deductive reasoning • distinguish between research methods and methodology • explain the features of a good research design • explain the steps in literature review	**Unit 1: Structuring the Research** Research: definitions, characteristics and types; Deductive vs. Inductive reasoning; Research methods vs. methodology; Need for a theoretical framework **Unit 2: Research Design** Meaning of research design; Features of a good research design; Concepts associated with research design; Steps in research design **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 **Unit 4: Research Process** Problem identification and formulation of problem statement; Formulating the aims and objectives, scope and limitations and research questions; Formulating the methodology and methods **Unit 5: Research Preparation** Listing of data/maps/ information to be collected and documented; Preparation of data collection format/questionnaire; Preparation of data collection checklists	Upon the completion, students would be able to: • 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	• 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

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Planning Colloquium and Seminar	**BPLN0713**	Guided practice and Assignments	Viva Voce	2	2	Knowledge and skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • engage in intellectual dialogue • engage in critical reading • participate in informed discussion • write assignments	Colloquium and seminar shall largely be devoted to a wide range of contemporary and emerging areas which inter alia shall include the following broad subject domains: • Planning theories (classical and contemporary) • Globalisation and urban planning • Innovations to transport planning • Land and Housing • Climate resilient planning • Informal sector planning • Urban Innovations • Smart city • Emerging Planning Concepts	Upon the completion, students would be able to: • undertake selective reading • learn the art of argument and counter argument • learn the dos and don'ts in public speaking • formulate and write reports	• Students are advised to refer to the recommended readings' list given under BPLN 0112 and BPLN 0712 [for communication & research methods] • Domain specific Literature review is advised for individual seminar assignments

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Planning Internship	**BPLN0714**	Guided Practice	Viva Voce		2	Knowledge and Skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
• develop an understanding of the process and methods of undertaking live planning projects • participate in the multi-disciplinary team of a live planning project • understand various aspects of spatial planning including exploring specialised fields	**Training Tasks:** • Students would submit the Training Completion and the Evaluation Certificate compulsorily from the relevant organization / consultancy after completion of training • Students shall work on project/s related to urban planning or any specialization such as infrastructure planning, environmental planning, transportation planning, real estate, housing etc. • Students will submit a report containing the nature of engagement and work carried out • Students would be evaluated by an internal panel of experts on the basis of the report and portfolio of work and the Evaluation Certificate at the time of Viva-Voce to be conducted during seventh semester **Training Organisation:** Any planning / development organization / consultancy firms/NGO/R&D cells of institutes/International NPO. The organisation / institution of training be decided in consultation with the Coordinator-in-charge of Training and Placement	Upon the completion, students would be able to: • make use of the experience gathered in the internship in studio exercises and other subjects • find the individual knowledge and skill gap and take corrective measures thereof	**Students would proceed for Planning Internship after the end semester examination of sixth semester** **Internship Period** : May 15 to August 14

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Planning for Special Areas	**BPLN0715**	Lecture, Assignments and Case studies	Written	3	3	Knowledge

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • explain the typology of special areas • define the salient features of special areas on different aspects • explain the governance framework of special areas • identify the infrastructural needs of special areas • explain the salient features of different programmes and policies for special areas	**Unit 1: Classification of Special Areas** Need for Special Area Planning; Defining special areas; Typology of formal and functional special areas: boarder area, hill area, coastal area, desert area, extremist affected area, Special Economic Zones, port City, aerotropolis, medi-City, knowledge City, defence area etc.; Contemporary approaches for Special Area Planning **Unit 2: Characteristics of Special Area** Socio economic, physiographic, geographic and political features of special areas **Unit 3: Governance of Special Areas** Governance framework of special areas; Land management in special areas; Survey of statutes governing special areas **Unit 4: Infrastructure for Special Areas** Unique infrastructural needs of special areas; Planning standards for special areas **Unit 5: Programmes and Projects for Special Areas** Survey of programmes and projects for special areas; Best practices of Special Area Planning	Upon the completion, students would be able to: • delineate the functional domain of special areas • collate and tabulate the information on socio economic, geo historic, physical and political features of special areas • analyse the land management system in special areas • identify planning issues for special areas • refer to the relevant acts, standards, programme and policies for special areas	• Special Economic Zones: Issues, Laws and Procedures , K. R. Gupta (Ed.), Atlantic Publishers, 2008 • Boarder Area Development Pragramme Guidelines, Ministry of Home Affairs, 2008 • Special Economic Zones in India, P. K. Manoj, Deep Publications Pvt. Ltd., New Delhi, 2001 • Development of Hill Areas, G.L. Dhobal, Concept Publishing, 2005 • Integrated Development of Hill Districts in India : Issues and Approaches, R.C. Gupta, Space • Environmental Problems of Coastal Areas in India, Vinod Sharma, Bookwell • Aerotropolis: The Way We'll Live Next, John Kasarda and Greg Lindsay, Allen Lane, 2011 • Knowledge and the City, Francisco J. Carrillo and Others, Routledge, 2014 • Environmental Act in India, Ruma Chatterjee, Oxford University Press • Market Towns, Neil Powe and Others (Eds.), Routledge, 2014 • CRZ Regulations, 2011, MoEF, Govt. of India • The Cantonments Act, 2006, Ministry of Law & Justice, Govt. of India • URDPFI Guidelines (Volume I and II), Ministry of Urban Development, Government of India, 2015

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Municipal Finance	**BPLN0716**	Lecture, Guided Practice, Group Exercise, Case Study Method	Written	3	3	Knowledge and skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • explain the role of CFC and SFC in municipal resource augmentation • explain the municipal finance framework • explain the municipal fiscal administration imperatives • define the various innovative methods in municipal resource generation • explain the salient features of FRBM Act • explain the indicators of municipal fiscal heath	**Unit 1: Municipal Finance – Constitutional Provisions** Constitutional provision for municipal finance: principle of fiscal federalism ; Constitution, powers and functions of Central Finance Commission (CFC) and State Finance Commission (SFC) **Unit 2: Municipal Finance Framework and Conventional Resources** Categorisation of municipal revenue: internal and external revenue, capital and revenue receipt; Municipal finance framework; Unit area method in property tax calculation and rationalisation of user charges; Streamlining municipal tax administration **Unit 3: Non Conventional Municipal Resources** Innovations in municipal resource mobilisation: monetary exaction (betterment levy, impact fee, external development charges, vacant land development tax); Land exactions (TDR, Town Planning scheme, accommodation reservation, monetisation of underutilised municipal assets); External finance: debt financing, PPP, role of financial intermediaries, municipal bond **Unit 4: Municipal Budget Administration** Municipal budget: general budget, performance budget, gender budget ; Fiscal Responsibility and Budget Management (FRBM) Act, 2003; Municipal accounting and auditing (overview only) **Unit 5: Assessment of Municipal Fiscal Scenario** Fiscal devolution vis-a-vis fiscal dependency of municipalities; Fiscal indicators – Revenue Dependency Ratio (RDR), Fiscal Autonomy Ratio (FAR), Expenditure Decentralisation Ratio (EDR) ; Financial operation plan	Upon the completion, students would be able to: • refer to inter governmental fiscal transfers from CFC and SFC reports • categorise municipal revenue • list the steps in property tax calculation • refer to the clauses of FRBM Act calculate the RDR, EDR and FAR	• Public Finance, R.A. Musgrave and P.B. Musgrave, Mc. Graw Hill, 1989 • Financing Cities in India: Municipal Reforms, Fiscal Accountability and Urban Infrastructure, Prasanna K. Mohanty, Sage, 2016 • Municipal Finances and Service Delivery in India, ASCI, Hyderabad, 2014 • Urban Public Finance in Developing Countries, Roy W. Bahl and J. Linn, Oxford University Press, 1992 • International Handbook of Land and Property Taxation, Richard M. Bird and Enid Slack, Edward Elgar, 2004 • Fundamentals of Municipal Finance, Joel A. Mintz and Larry A. Bakken, ABA Publishing, 2010 • Municipal Finances: A Handbook for Local Governments, Catherine D. Farvacque-Vitkovic and Mihaly Kopanyi (Eds.), World Bank Publications, 2014 • Financing Metropolitan Governments in Developing Countries, Roy W. Bahl and Others (Eds.), Lincoln Institute of Land Policy, Cambridge, 2013 • Municipalities and Finance: A Sourcebook for Capacity Building, Nick Devas and Others (Eds.), Routledge, 2012 • Urban Property Tax Potential in India, O.P. Mathur and Others, NIPFP, 2009

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Advanced Transportation Planning	**BPLN0717**	Lecture, Guided Practice, Group Exercise	Written	3	3	Knowledge and Skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • explain the methods of travel demand estimation • explain the methods of transit movement • explain the methods of incentivization of alternative modes • underline the importance of inter and intra regional transport connectivity • explain the traffic induced noise and air pollution • read and interpret the accident report and discern the causes behind accident • appraise transport projects • evaluate the transport policies • ascertain the energy implication in transport planning • appreciate latest transportation trends and technology	**Unit 1: Travel Demand Management** Estimation of travel demand ; Transit improvement; Incentivising use of alternative modes; Devising appropriate parking price; Financial incentivization to commuter; Policy and institutional reforms in land management; Travel demand management: principles and techniques; Concepts of accessibility and equity **Unit 2: Regional Transport Systems** Importance of regional accessibility across different modes of transport; Planning for inter and intra regional multi modal connectivity for freight and passenger transport; Planning for road network for micro regions; Design parameters of a logistics hub **Unit 3: Transport and Environment** Traffic noise: factors, abatement measures, standards; Air pollution standards; Traffic safety: accident reporting and recording systems, factors affecting road safety; User specific transport planning; Norms and guidelines for highway landscape; Street lighting: design considerations **Unit 4: Economic Evaluation and Transport Policies** Pricing and funding of transport service and systems; Economic appraisal of highway and transport projects; Costs benefits techniques for road user, value of time; Review of transport policies and their relevance in transport planning; Energy implications in transport; Review of Urban Transport Policy; Institutional mechanisms in transport and traffic planning **Unit 5: Technology and Transportation** Intelligent Transportation System; Big data analysis; Smart parking; Smart ticketing; SCADA, automated transportation options, etc.	Upon the completion, students would be able to: • work out the demand for travel • devise the incentivising methods to augment the use of alternative modes • list the design parameters for a logistics hub • list the corrective measures to curb the traffic induced air and noise pollution • list the design parameters for street furniture and highway landscape • carry out economic appraisal of transport projects • list the steps in pricing of transport services and systems • list out various technology options	• Advanced Transport Systems: Analysis, Modeling, and Evaluation of Performances, Milan Janić, Springer, 2014 • The Economics of Transport: A Theoretical and Applied Perspective, Jonathan Cowie, Routledge • Public Transport Planning and Operations, Gerry Howard, PTRC Education and Research Services Limited, 1990 • Public Transport: Its Planning, Management and Operations, Peter White, Routledge, 2011 • Modelling Transport , Juan De Dios Ortuzar and Luis G. Willumsen, John Wiley & Sons, 2011 • Integrated Land Use and Transport Modelling, Tomas De La Barra, Cambridge University Press • Transport Planning and Traffic Engineering, Coleman O'Flaherty, Elsevier, 1997 • Transport Systems, Policy and Planning: A Geographical Approach, Rodney Tolley, Brian John Turton, Routledge, 2013 • Reading Material on Advanced Transportation Planning, P. Kansal, New Delhi, Institute of Town Planners, India, 1998 • Planning and Design for Sustainable Urban Mobility: Global Report on Human Settlement, UN-Habitat, Routledge, 2013 • Transport Matters: Integrated Approaches to Planning City-Regions, Hull Angela, Routledge • Urban Transportation and Logistics: Health, Safety and Security Concerns, Eiichi Taniguchi and Others CRC Press, 2014

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Public Policy Analysis	BPLN0718	Lecture	Witten	3	**3**	Knowledge and Skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To inculcate the knowledge and skills so as to enable the students to: • Appreciate the relevance of public policy in urban development • Explain the policy preparation and implementation process • Explain the various tools of policy monitoring • Understand methods of policy outcome analysis	• **Unit 1: Policy Making Approaches –** Nature, Scope, Significance and Contextual Perspectives; Policy Making Approaches and Models: Power Approaches, Institutional Approaches, Strategic Planning Approach, Rational Approach; Simon's Rationality Model; Decision-Making Process and Techniques • **Unit 2: Policy-Making Techniques:** Structure of Power and Public Policy-Making Process; Power and Role of Non-Officials in Policy-Making; Policy-Making Power within the Executive; Intergovernmental Relations and Public Policy Issues • **Unit 3: Policy Monitoring :** Public Policy Implementation and Monitoring; Approaches and Models; Inter-Organizational Relations; Public Policy Delivery Agencies and Implementers; Issues and Imperatives of Policy Monitoring • **Unit 4: Policy Evaluation:** Techniques and Approaches; Policy Evaluation: Role, Process and Criteria; Policy Performance: Evaluating Impact: ex-ante and ex-post • **Unit 5: Analysis of Case Study Policies** International Agencies and Globalization of Policy Agendas; Case Examples: National Urban Sanitation Policy, National Urban Housing & Habitat Policy, National Policy for Urban Street Vendors, National Environmental Policy, National Urban Transport Policy, National Water Policy, Policy on Energy, etc.	Upon the completion, students would be able to: • List the steps in the formulation of public policies • Evaluate the objectives of public policies • Assess public policies in terms of outcome.	1. Urban Policy in Practice, Tim Blackman, Publisher: Routledge 2. Public Policy: Art and Craft of Policy Analysis, R. K. Sapru, PHI Learning Pvt. Ltd-New Delhi 3. Public Policy Analysis, William N. Dunn, Pearson Education 4. Public Policy, Analysis and Design, VK Agnihothri, Concept Publishing 5. Approaching Public Policy Analysis: An Introduction to Policy and Programme Research, Kent E. Portney, Prentice Hall-Gale 6. http://urbanindia.nic.in/policies/TransportPolicy.pdf 7. http://envfor.nic.in/nep/nep2006.html 8. http://urbanindia.nic.in/programme/uwss/NUSP.pdf 9. http://mhupa.gov.in/w_new/sug_npusv.pdf 10. http://wrmin.nic.in/writereaddata/linkimages/nwp20025617515534.pdf 11. http://mowr.gov.in/writereaddata/linkimages/DraftNWP2012_English9353289094.pdf

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Logistics Planning and Management	**BPLN0719**	Lecture, Guided Practice, Group Exercise, Case Study Method	Written	3	3	Knowledge and skill

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To inculcate the knowledge and skills so as to enable the students to: • Appreciate the concepts related to Logistics and Freight Planning • To understand the role of Freight Transport in urban and Regional Planning • To get exposure of emerging concepts in Logistics Planning and Supply Chain Management • Learn the methods used in strategic logistics management along with the various techniques of operation efficiency	**Unit I: Introduction to Logistics and Supply Chain Management** Concepts, Definition, Evolution, Importance of logistics Management; Logistics Organizations & relationships; Mode characteristics and key features of Road, Rail, Sea/Water, Air; City Logistics; Fundamentals of Supply chain management (SCM); New concepts like Third party and fourth party logistics; Reverse Logistics. **Unit II: Freight Handlers and Generators** Types of Dry & Wet Ports; Logistics Parks/ Hubs; Warehousing, freight terminals, Integrated Freight complex, Urban Consolidation Centers, etc.; Planning and design considerations; Transport cost drivers. **Unit III: Freight Demand and Distribution Network Modelling** Determinants of freight demand; distribution channels; distribution costs; location decisions; transport modes selection; route selection (VRP); vehicle scheduling (TSP); fleet sizing. **Unit IV: Management of Freight Transport** Inter-modal, Multi-modal Transport; Containerization, Outsourcing; Vehicle access and loading/ unloading operations; low emission zones; night deliveries; nearly delivery areas, ITS applications etc **Unit V: Freight Policies and Measures** Statutes and policies for freight and logistics in India and abroad; Freight Quality Partnerships, Freight Performance Measures, Green Freight Program, supporting case studies and best practices	Upon the completion, students would be able to: • Understand the concepts and dynamics of logistics and freight planning • Understand the material flow and linking it to the spatial planning and mode of transport • Understand the institutional framework, statutes and policy provisions for transport logistics	• 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. • Intermodal Freight Transport: Institutional Aspects, OECD,2001

Fourth Year – Eighth Semester

Fourth Year : Eighth Semester						
Subject Code	**Name of Proposed Subjects (Six)**	**Credits**	**Lab**	**Lecture**	**Assignment/ Tutorial**	**Method of Evaluation**
BPLN0811	Planning Thesis	20	20	0	0	Viva Voce
BPLN0812	Professional Planning Practices	4	0	3	0	Written
BPLN0813	General Proficiency	2	0	0	0	Viva Voce
	Total	**26**				

FOURTH YEAR : EIGHTH SEMESTER						
Subject Name	**Subject Code**	**Mode of Instruction**	**Method of Evaluation**	**Number of Weekly Periods**	**Credits**	**Learning Domain**
Planning Thesis	**BPLN0811**	Guided Practice	Viva Voce	20	20	
Learning Objectives	**Subject Contents**		**Learning Outcome**	**Recommended Readings**		
To impart necessary knowledge and skills to enable students: • follow the guided path to carry out the research on a topic of his/her choice finalised in the previous semester • arrive at a spatial planning solution preceded by an extensive and intensive analyses of socio- economic, physical, institutional and statutory aspects	**Stage 1: Finalisation of Research Design** Finalisation of dissertation title; Finalisation of aim and objectives, research questions, scope and limitations **Stage 2: Literature Review and Research Methodology** Survey of literatures; Validation of research methodology **Stage 3: Data Collection and Compilation** Tabulation of collected data; Preparation of charts, graphs, maps; Assessing additional data requirement **Stage 4: Data Analysis and Findings** Analysis of collected information and data sets; Findings and inferences **Stage 5: Proposals and Recommendations** Specific proposals preferably in spatial terms		Upon the completion, students would be able to: write a thesis identifying and analysing the issues following research principles and suggest planning imperatives	• 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		

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
Professional Planning Practices	**BPLN0812**	Lecture	Written	3	4	Knowledge

Learning Objectives	Subject Contents	Learning Outcome	Recommended Readings
To impart necessary knowledge and skills to enable students: • explain planner's role in decision making process • appreciate the importance of planner's relationship with others • explain the roles and responsib-ilities of planners' professional bodies • explain the procedures for undertaking planning consultancy • appreciate the importance of IPR and Copyright • explain the methods of conflict resolution and consensus building • explain the instruments of negotiation • explain the code of professional conduct	**Unit 1: Role of Planner** Planner's role in decision making processes; Relationship with client, developers, institutions and other professionals **Unit 2: Professional Bodies and Responsibilities** Aims and objectives of professional institutes, sister bodies; Responsibilities towards clients, fellow professionals and general public **Unit 3: Planning Consultancy** Acquaintance with bidding process, safeguards etc; Contract agreement; Structure of professional charges; Office procedure and management; A overview of IPR and Copyrights **Unit 4: Conflicts Resolution, Negotiation and Consensus Building** Nature of conflicts, pre-empting conflicts and conflict resolution measures; Instruments of negotiation; Information based and principal based negotiation; Survey of court cases **Unit 5: Ethics in Planning Profession** Ethics in planning profession; Moral reasoning; Planning practice and ethical dilemmas and its resolution; Code of professional conduct	Upon the completion, students would be able to: • list planner's institutional responsibility • list planner's accountability towards clients • formulate project proposals • initiate and execute the bidding process • negotiate and resolve conflicts • accomplish consensual decision making list the code of professional conduct	• Planning Support Systems: Best Practice and New Methods, S. Geertman, Springer • Applying Leadership and Management in Planning: Theory and Practice, Janet Morphet, Policy Press, 2015 • The Pragmatic Planner: Social Change and The Role of Town Planning, Gary Peacock, University of New South Wales, 1979 • Professional Practice, K.G. Krishnamurthy and S.V. Ravindra, PHI Learning Pvt. Ltd., 2014 • Urban and Regional Planning In India : A Handbook for Professional Practice, S. K. Kulshreshtha, New Delhi, Sage, 2012 • Planning Ethics: A Reader in Planning Theory, Practice and Education, Sue Hendler, Center for Urban Policy Research, 1995 • Investigating Town Planning: Changing Perspectives and Agendas, Clara Greed, Routledge, 1996

Subject Name	Subject Code	Mode of Instruction	Method of Evaluation	Number of Weekly Periods	Credits	Learning Domain
General Proficiency	**BPLN0813**		Viva Voce		2	
Learning Objectives	**Subject Contents**		**Learning Outcome**			
The objective of the course is to assess the all round development of the students at the end of all theoretical and practical courses A student's achievement shall be evaluated on the basis of his/her performance in various extra-curricular and co-curricular activities besides academic excellence	A student's general proficiency shall be evaluated across the following performances: • Paper publication in international journal – 15 marks • Paper publication in national journal – 10 marks • Paper publication in newsletter/others – 5 marks • Paper presentation in conference/seminar (international) – 10 marks • Paper presentation in conference/seminar (national) – 5 marks • Participation in Integrated Studio/NOSPLAN/Inter College Competition – 30 marks • Engagement with NSS/NCC/Others (Please specify) – 25 marks • Administrative/Managerial responsibilities in the Institute – 20 marks • Excellence in sports and cultural activities – 10 marks • Scholarships – 10 marks *N.B. The above performance indicators are only indicative and subject to changes from time to time*					

N.B. Students are advised to refer to the websites of following ministries of Government of India for different policies and programmes besides that of other organizations mentioned below.

- Ministry of Urban Development
- Ministry of Housing and Urban Poverty Alleviation
- Ministry of Environment, Forest and Climate Change
- Ministry of Drinking Water and Sanitation
- Ministry of Micro, Small and Medium Enterprises
- Ministry of New and renewable Energy
- Ministry of Rural Development
- Ministry of Skill Development and Entrepreneurship
- Ministry of Social Justice and Empowerment
- Ministry of Statistics and Programme Implementation
- Ministry of Road Transport and Highways
- Ministry of Water Resources, River Development and Ganga Rejuvenation
- Census of India
- World Bank, UNDP, Asian Development Bank and UN-Habitat