Annex-I
of Academic Council Meeting
of SPAV held on 18.06.2015

Bachelor of Planning

Course Structure and Syllabus for
Four Year Under Graduate Degree Programme in Planning

(As approved by the
Academic Council of SPAV on its Vth Meeting held on June 18, 2015
and
the Board of Studies in Planning at its Meeting held on March07, 2015
at SPAV Nidamanuru campus)

(Effective from Academic Year 2015-16)

योजना तथा वास्तुकला विद्यालय, विजयवाडा
School of Planning and Architecture, Vijayawada
An Institute of National Importance, MHRD, Govt. of INDIA.

First Semester

Sl. No.	Code	Subject Title	Distribution of Marks				Distribution of Periods per week			Credits
			IA	EE	EJ	TM	L	P	TP	
1	BPLN102	Computer Applications in Planning	50	0	50	100	0	3	3	3
2	BPLN103	Introduction to Urban and Regional Planning	50	50	0	100	3	0	3	3
3	BPLN104	Evolution of Human Settlements	50	50	0	100	3	0	3	3
4	BPLN105	Quantitative Methods for Planning	50	50	0	100	3	0	3	3
5	BPLN106	Surveying and Photogrammetry	50	50	0	100	3	0	3	3
6	BPLN101	Graphics Studio	250	0	250	500	0	15	15	15
	TOTAL		**500**	**200**	**300**	**1000**	**12**	**18**	**30**	**30**

Second Semester

Sl. No.	Code	Subject Title	Distribution of Marks				Distribution of Periods per week			Credits
			IA	EE	EJ	TM	L	P	TP	
1	BPLN202	Introduction to Geoinformatics	50	0	50	100	0	3	3	3
2	BPLN203	Population and Settlement Geography	50	50	0	100	3	0	3	3
3	BPLN204	Planning Project Estimation	50	50	0	100	3	0	3	3
4	BPLN205	Elements of Economics for Planning	50	50	0	100	3	0	3	3
5	BPLN206	Elements of Sociology for Planning	50	50	0	100	3	0	3	3
6	BPLN201	Planning and Mapping Studio	250	0	250	500	0	15	15	15
	TOTAL		**500**	**200**	**300**	**1000**	**12**	**18**	**30**	**30**

IA = Internal Assessment
EE = End Evaluation
EJ = External Jury / Viva Voce
TM = Total Marks
L = Lecture Periods
P = Practicals/ Lab/Workshop Periods
TP = Total Periods

Third Semester

Sl. No.	Code	Subject Title	Distribution of Marks				Distribution of Periods per week			Credits
			IA	EE	EJ	TM	L	P	TP	
1	BPLN302	Planning Techniques	50	50	0	100	3	0	3	3
2	BPLN303	Planning Theory	50	50	0	100	3	0	3	3
3	BPLN304	Planning for Physical Infrastructure	50	50	0	100	3	0	3	3
4	BPLN305	Traffic and Transportation Planning	50	50	0	100	3	0	3	3
5	BPLN306	Socio-economic Structure and Spatial Planning	50	50	0	100	3	0	3	3
6	BPLN301	Built Environment and Site Planning Studio	250	0	250	500	0	15	15	15
	TOTAL		**500**	**250**	**250**	**1000**	**15**	**15**	**30**	**30**

Fourth Semester

Sl. No.	Code	Subject Title	Distribution of Marks				Distribution of Periods per week			Credits
			IA	EE	EJ	TM	L	P	TP	
1	BPLN402	Advanced Geoinformatics	50	0	50	100	0	3	3	3
2	BPLN403	Contemporary Planning Theory	50	50	0	100	3	0	3	3
3	BPLN404	Civic and Social Infrastructure Planning	50	50	0	100	3	0	3	3
4	BPLN405	Urban Renewal and Re-development	50	50	0	100	3	0	3	3
5	BPLN406	Housing and Real Estate Development	50	50	0	100	3	0	3	3
6	BPLN401	Transportation Planning Studio	250	0	250	500	0	15	15	15
	TOTAL		**500**	**200**	**300**	**1000**	**12**	**18**	**30**	**30**

Note: Compulsory Practical training during summer vacation.

IA = Internal Assessment EE = End Evaluation EJ = External Jury / Viva Voce
TM = Total Marks L = Lecture Periods
P = Practicals/ Lab/Workshop Periods TP = Total Periods

Fifth Semester

Sl. No.	Code	Subject Title	Distribution of Marks				Distribution of Periods per week			Credits
			IA	EE	EJ	TM	L	P	TP	
1	BPLN502	Planning and Management of Green and Open Spaces	50	50	0	100	3	0	3	3
2	BPLN503	Integrated Planning for Informal Sector	50	50	0	100	3	0	3	3
3	BPLN504	Development Planning and Management	50	50	0	100	3	0	3	3
4	BPLN505	Environmental Planning and Management	50	50	0	100	3	0	3	3
5	BPLN506	Planning Legislation	50	50	0	100	3	0	3	3
6	BPLN501	Area Development Planning Studio	250	0	250	500	0	15	15	15
	TOTAL		**500**	**250**	**250**	**1000**	**15**	**15**	**30**	**30**

Sixth Semester

Sl. No.	Code	Subject Title	Distribution of Marks				Distribution of Periods per week			Credits
			IA	EE	EJ	TM	L	P	TP	
1	BPLN602	Regional Planning	50	50	-	100	3	0	3	3
2	BPLN603	Planning Practice	50	50	-	100	3	0	3	3
3	BPLN604	Project Formulation and Appraisal	50	50	-	100	3	0	3	3
4	BPLN601	Master Plan Studio	250	0	250	500	0	15	15	15
ANY TWO										
5	BPLN611	Freight Transport and Logistics Management *	50	50	-	100	3	0	3	3
6	BPLN612	Elective from other Dept. **	50	50	-	100	3	0	3	3
	TOTAL		**500**	**250**	**250**	**1000**	**15**	**15**	**30**	**30**

*Elective – I offered from the Department of Planning

**Elective – II offered from the other Department/s

Note: Compulsory Practical training during summer vacation.

IA = Internal Assessment EE = End Evaluation EJ = External Jury / Viva Voce
TM = Total Marks L = Lecture Periods
P = Practicals/ Lab/Workshop Periods TP = Total Periods

BPLN603 is to be read as:

BPLN = B.Planning 6 (1st Digit) = 6th Semester 0 (2nd Digit) = Subject 3 (3rd Digit) = 3rd Subject.

BPLN612 is to be read as:

BPLN = B.Planning 6 (1st Digit) = 6th Semester 1 (2nd Digit) = Elective Subject 2 (3rd Digit) = 2nd Elective Subject

Seventh Semester

Sl. No.	Code	Subject Title	Distribution of Marks				Distribution of Periods per week			Credits
			IA	EE	EJ	TM	L	P	TP	
1	BPLN702	Dissertation –Formulation of Research Proposal	50	0	50	100	0	3	3	3
2	BPLN703	Urban Finance	50	50	-	100	3	0	3	3
3	BPLN704	Metropolitan Planning	50	50	-	100	3	0	3	3
4	BPLN705	Governance and Management	50	50	-	100	3	0	3	3
5	BPLN701	Regional Planning & Development Studio	250	0	250	500	0	15	15	15
ANY ONE										
6	BPLN711	Environmental Impact Assessment *	50	50	-	100	3	0	3	3
7	BPLN712	Planning for Disaster Management *	50	50	-	100	3	0	3	3
8	BPLN713	Elective from other Dept.**	50	50	-	100	3	0	3	3
	TOTAL		**500**	**250**	**250**	**1000**	**12**	**18**	**30**	**30**

* Elective – I offered from the Department of Planning

** Elective – II offered from the other Department/s

Eighth Semester

Sl. No.	Code	Subject Title	Distribution of Marks				Distribution of Periods per week			Credits
			IA	EE	EJ	TM	L	P	TP	
1	BPLN802	Rural Planning and Development	50	50	0	100	3	0	3	3
2	BPLN803	Water Sensitive Urban Development	50	50	0	100	3	0	3	3
3	BPLN804	Climate Change and Cities	50	50	0	100	3	0	3	3
4	BPLN801	Dissertation	350	0	350	700	0	21	21	21
	TOTAL		**500**	**150**	**350**	**1000**	**9**	**21**	**30**	**30**

IA = Internal Assessment EE = End Evaluation EJ = External Jury / Viva Voce
TM = Total Marks L = Lecture Periods
P = Practicals/ Lab/Workshop Periods TP = Total Periods

BPLN703 is to be read as:

BPLN = B.Planning 7 (1st Digit) = 7th Semester 0 (2nd Digit) = Subject 3 (3rd Digit) = 3rd Subject.

BPLN712 is to be read as:

BPLN = B.Planning 7 (1st Digit) = 7th Semester 1 (2nd Digit) = Elective Subject 2 (3rd Digit) = 2nd Elective Subject

First Semester

BPLN102 Computer Applications in Planning

Number of Credits	3	Subject Category	Lab
Lecture Periods/Week	0	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	3	External Jury	50
Total Periods/Week	3	Total Marks	100

Objective: To develop proficiency in the use of basic software and application in physical planning.

Unit 1: Working with Word and Spread Sheet Packages

Basics of word, working on layouts, document elements, tables, charts, referencing, index, referencing and standards; Preparation of reports; Working on digital presentations, slide designs and sequence; Spread sheets, tables, import and export of graphics, working on charts, analysis, tools and formulas, pivot and macros, advanced analysis in spread sheets.

Unit 2: Data Base Management

Introduction to data base management systems; Information systems in planning discipline, NIUS, National Spatial Data Management Systems, National Urban Information Systems, ENVIS, NIC, etc.

Unit 3: Introduction to Computer Aided Drafting & Design (CADD) Software

Need for automated design and drafting, tools for automated designs and drafting, elements of spatial data in CADD, basic commands in CADD - lines, rectangles, polylines, points, circles, donuts, layers, grids, snaps and object snaps, etc.

Unit 4: Editing and Controlling Display in CADD

Move, scale, copy, offset, change, trim, extend, mirror, divide, measure, array, break, hatch, block, zoom, regen, view, pan, fonts, etc.; Common errors in scaling, printing and exporting and importing drawings; Creating non-printed output, exporting to dwf, pdf, jpeg, sending electronic transmittal sets, exporting a model to a 3D dwf; Print and plot concepts.

Unit 5: Application of Software in Planning Discipline

Introduction to CAD drawings, photo editing, audio and visual editing software and statistical tools; Application of these tools in planning discipline and e-governance.

Suggested Readings:

1. Douglas, Seidler R (2007), *Digital Drawing for Designers – A Visual Guide to AutoCAD*, Firchild Publications, Inc., New York.
2. Magurie, Dennis (1988), *Engineering Drawing From First Principles – Using AutoCAD*, Arnold Publishers, Great Britain.
3. Government of India (2010) *Guidelines for GIS Mapping, MIS Development and Integration of GIS with MIS*, Ministry of Housing and Urban Poverty Alleviation ,New Delhi.
4. Government of India (2006) TCPO, MOUD , *National Urban Information System – Design and Standards*, Government of India, New Delhi.

BPLN103 Introduction to Urban and Regional Planning

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: Give an overview to basic concepts and processes related to spatial planning.

Unit 1: Planning Terminologies

Definition of Urban and Rural; Basic definitions and frequently used terminology in planning – landuse, demography, physical infrastructure, social infrastructure and housing.

Unit 2: Nature of Planning

The interdisciplinary nature of planning; Understanding development and the concept of 'effective change'; Resources and resource optimization.

Unit 3: Levels of Planning

Constitution of India; Nature of the Indian federal structure; Hierarchy of administrative boundaries in India; Various levels of planning; Reasoning and its various forms in planning - space, place and location.

Unit 4: Sourcing Information in Planning

Census of India, National Sample Survey Organisation etc., as sources of information; Basics of web based information portals and datasets as raw information sources.

Unit 5: Planning Process

Classical approaches to planning; Comparative understanding of the process, objectives and strategies; Sustainability and rationality in planning; planning knowledge – scope, sources and forms; Art of visioning; Forecasting and back-casting approaches; Definition of development plan; Types of development plans: master plan, structure plan, district plan, action area plan, subject plan, town planning scheme, regional plan, sub-regional plan; Planning advisory group report and URDPFI guidelines; Sector plans and spatial plans.

Suggested Readings:

1. *Administrative Atlas of India* 2011. http://censusindia.gov.in/2011census/maps/maps2011.html
2. Basu D.D (2011), *Introduction to the Constitution of India, Nagpur*, LexisNexis Butterworths Wadhwa.
3. Ebert, J.E.J. Et al. (2009), *Forecasting and Backcasting: Predicting the Impact of Events on the Future*, Journal of Consumer Research, Inc. Vol. 36.
4. Government of India (2015), *Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines*. Vol. 1, Town and Country Planning Organisation Ministry of Urban Development, New Delhi.

BPLN104 Evolution of Human Settlements

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To gain insights into the evolution of human settlements from ancient to modern towns/ cities in relation to cultural, socio-economic aspects and human values.

Unit 1: Introduction

History of human settlements through civilizations – prehistoric, Indus valley, Mohenjo-Daro, Harappa, Sumerian, Egyptian, Greek, Roman and Chinese settlements, Inca Civilization.

Unit 2: Ancient Settlement Planning of Towns and Cities

Ancient planning principles from Manasara: case-studies of Hindu planned towns like Srirangam, Thanajavur, Varanasi, Chidambaram and Madurai; planning of Islamic towns; European medieval towns and cities; Euclidean zoning of cities; Vitruvius and Andrea Palladio views on towns and cities.

Unit 3: Space, Time and Urban Structure

City Beautiful Movement by Daniel Burnham, F.L. Wright's broad-acre city, Clarence Perry's neighbourhood unit formula; Ebenezer Howard's Garden City, Contemporary city of Le Corbusier; Lewis Mumford's views on new social order, Dynapolis concept of Doxiadis; Radburn planning principles; Patrick Geddes and British town planning contributions in India.

Unit 4: Contemporary Towns and Cities

Case studies in India and abroad: smart cities, technology oriented towns, eco-towns, compact cities, global cities, and network cities.

Unit 5: Contemporary Concept of Planning Region

Concept of ring towns, satellite towns, counter magnets, urban sprawl, National Capital Region (NCR); Special Economic Zones (SEZ), Capital City Region, Investment regions, economic corridors, smart growth, transit oriented development.

Suggested Readings:

1. Binode Behari Dutt (2009), *Town Planning in Ancient India,* Thacker Spink and Co., Calcutta.
2. Gallion, A (1963), *The Urban Pattern; City Planning and Design*, D.V. Nostrand Company Inc, New York.
3. Hakim S Besim (1986), *Arabic-Islamic Cities; Building and Planning Principles*, Emergent City Press, New York.
4. Srivastava S B (2010), *Profession, Ethics and Human Values*, Scitech Publications, Chennai.

BPLN105 Quantitative Methods for Planning

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To acquire basic proficiency in statistical techniques.

Unit 1: Statistical Data

Statistics - its uses and limitations, statistical data and sources of data, universe and sampling; Methods and tools of data collection; Formulation of tools of data collection; Classification and tabulation of data; Presentation of data (diagrammatic, tabular, graphical); Sampling, data coding and validation, design of survey formats.

Unit 2: Statistical Methods

Frequency distribution; Measures of central tendency and dispersion; Correlation - simple correlation, karl pearson's and spearman's correlation.

Unit 3: Probability

Introduction to probability; Discrete random variables and probability distribution; Continuous random variables and probability distribution, probability density function.

Unit 4: Theoretical Distributions

Binomial distribution; Poisson distribution; Normal distribution; Relation between binomial, normal distributions, poisson and normal distributions.

Unit 5: Index Numbers and Regression Analysis

Types and methods of construction of index numbers; Test of consistency of index number formulae; Chain base index numbers and cost of living index numbers; Regression - Least Square Method, Linear Regression analysis, two stage regression analysis, confidence limits, tests of significance.

Note: Examples from urban planning may be applied in each unit.

Suggested Readings:

1. Giri P K. & Banerjee J (2013), *Introduction to Statistics,* Academic Publishers, Delhi.
2. Gupta, S.C (2009), *Fundamentals of Statistics*, Himalaya Publishing House, Mumbai.
3. Hastie, T., Tibshirani, R. and Friedman, J (2009), *The Elements of Statistical Learning*, Springer, USA.
4. Rochefort, D.A (2006), *Quantitative Methods in Practice*, CQ Press, USA.

BPLN106 Surveying and Photogrammetry

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To acquire proficiency in basics of Geoinformatics covering the topics related to surveying, remote sensing, photography, photogrammetry and GPS technologies.

Unit 1: Fundamentals of Surveying

Definitions, classifications, use, objectives and basic principles of surveying; Classifications of measurements and units, concepts of scales, maps and plan and use of conventional symbols; Chain surveying and compass surveying, plain table surveying and computations of areas, levelling and contouring.

Unit 2: Conventional Surveying Methods

Definition, application, advantages and disadvantages, Principles; Instruments used, steps in chain survey; Definition of framework of survey, survey lines, survey stations, base line, tie line, check line; Ranging and chaining a survey line; Plotting chain survey to prepare a plan.

Unit 3: Contemporary Surveying Methods

Digital planimeter, total station, Global Positioning System, Differential Global Positioning System.

Unit 4: Photogrammetry

Photogrammetry as an alternative tool for surveying; Introduction to aerial remote sensing and aerial photographs, classification; Principles of stereoscopic vision; Basic instruments - stereo-pair, pocket and mirror stereoscopes, parallax bars; Principles of photogrammetry, Measurement of heights and depths; Introduction to digital photogrammetry.

Unit 5: Applications

Applications in urban and regional planning; Laboratory exercises.

Suggested Readings:

1. Bannister A. and Raymond S (1992), *Surveying*, ELBS, New Delhi.
2. Kanetkar T.P (1994), *Surveying and Levelling*, Vols. I and II, United Book Corporation. Pune.
3. Punmia B.C (1989), *Surveying*, Vols. I, II and III, Laxmi Publications. New Delhi.
4. Wilfried Linder (2009), *Digital Photogrammetry: A Practical Course*, Springer Science & Business Media.

BPLN101 Graphics Studio

Number of Credits	15	Subject Category	Studio
Lecture Periods/Week	0	Internal Assessment	250
Practicals /Lab/Workshop Periods/Week	15	External Jury	250
Total Periods/Week	15	Total Marks	500

Objective: To inculcate the knowledge of basic technical drawing skills, visualization, presentation and representation techniques.

Unit 1: Drawing Materials and Equipment

Introduction to drawing equipment - drawing boards, set squares, types of pencils, drawing pens, T-square, pro circles, French curves, parallel squares, types of brushes, water colours, crayons; paper - sizes, types, card boards, etc.; Folding of drawing sheets; Importance of graphics and visual presentations – manual and digital modes.

Unit 2: Fundamental Elements of Drawing

Principles of composition; points, lines - types of lines, line thicknesses, line styles and intensities; polygons; dimensioning, lettering, standard symbols, colour-coding, legend, drawing formats, colour wheel, types and mixing of colours, tints, tones, etc.; Representation of human figures, trees, hedges, vehicles, etc.

Unit 3: Geometric Shapes and Forms

Geometric patterns; Shapes and forms: Concept of positive and negative spaces; Principles of planar geometry, sections of solids; Simple and complex solids; Sketching of geometric built forms.

Unit 4: 3D Views and Projections

Orthographic projections, isometric, axonometric, oblique and perspective views – one point, two point and three point.

Unit 5: Scale and Measured Drawing

Scale (numeric and graphic) and proportion in drawings; Measured drawing: Site plan indicating the footprint of building, open spaces, roads and other related objects; Plans, elevations and sections.

Suggested Readings:

1. Government of India (2015), *Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines*. Vol. 1, Town and Country Planning Organisation, Ministry of Urban Development, New Delhi.
2. Guptill, A.L (2014), *Rendering in Pen and Ink: The Classic Book on Pen and Ink Techniques for Artists, Illustrators, Architects, and Designers*, Potter/TenSpeed/Harmony.
3. Government of India (1996), *Working with Maps*, Survey of India. Dehradun.
4. Government of India (2004), *Guide To Preliminary Planning Surveys of Urban Areas Including Land Use Classification*, TCPO, Ministry of Urban Development & Poverty Alleviation, New Delhi.

Note: All the tasks/drawings to be undertaken manually

Second Semester

BPLN202 Introduction to Geoinformatics

Number of Credits	3	Subject Category	Lab
Lecture Periods/Week	0	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	3	External Jury	50
Total Periods/Week	3	Total Marks	100

Objective: To introduce the concepts of geo-informatics (remote sensing in particular) and to familiarise with the associated scientific tools, their relevance and applicability in urban planning.

Unit1: Introduction

Planning Information Systems (PIS) – Components, data needs; PIS in India – NNRMS, NUIS, NSDI, National Urban Observatory, etc.; Spatial Data Infrastructure (SDI) - Framework of geo-spatial data, Users and tools, Agreements on geo-spatial standards, Policies for geo-spatial data, Institutional arrangements, use of SDI for urban and regional planning.

Unit 2: Concepts of Remote Sensing

Definitions, types of remote sensing – passive and active (LiDAR and RADAR); Concepts: electro magnetic spectrum, energy interaction with surface features- spectral reflectance and emittance; multi concept in remote sensing.

Unit 3: Data Acquisition

Image data capture: types of platforms – satellite bourne (sun synchronous and geo synchronous satellites), air bourne and ground bourne; Resource satellites – LANDSAT, IRS, CARTHOSAT, IKONOS, QUICKBIRD, etc.; Image resolutions – spatial, temporal, spectral and radiometric; Stereo satellite data.

Unit 4: Digital Image Processing and Analysis

Geo-rectification - Earth shape, Earth surface projections and geoids, coordinates, geo-referencing; Digital image processing - interpretation enhancement, distortions, radiometric correction; Overlay of images, image data classification – supervised and unsupervised classification, image sub-setting and mosaicking; Photogrammetric methods - integration, application, stereo data analysis, stereoscopy, triangulation, terrain modelling, contour extraction, digital elevation model.

Unit 5: Applications in Urban Planning

Remote sensing for land management, landuse monitoring, municipal applications, cadastral purposes, environmental monitoring, utility mapping, etc.

Suggested Readings:

1. Jensen, J.R (2000), *Introductory Digital Image Processing: A Remote Sensing Perspective*, Prentice-Hall, New Jersey.
2. Joseph, G (2003), *Fundamentals of Remote Sensing*, University Press, Hyderabad.
3. Lillesand, T. and Kiefer, R.W (1987), *Remote Sensing and Image Interpretation*, Wiley.
4. Peter M Atkinson, (2009), *Geoinformatics*, Eolss publishers, Oxford.

BPLN203 Population and Settlement Geography

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To understand the relationships of various attributes of demography, urbanization and settlement geography.

Unit 1: Nature and Scope of Demography

Definition of demography, need for demographic studies; Evolution of population study; Contribution of Malthus; Demographic variables - fertility, mortality; Types, trends, biological and social factors, measures of fertility, crude birth rate; Measures of crude death rate, Migration - types, trends, causes and consequences of migration, theories of migration, demographic transition.

Unit 2: Demographic Analysis

Basics of population studies, source of demographic data, population structure and composition – age sex composition, sex ratio, dependency ratio, child-woman ratio; Measures of age–sex structure, age–sex pyramid.

Unit 3: Population Projection Models

Population projection methods; Population composition, marital status, caste, religion, educational background and occupation; Life table techniques; Basic Cohorts survival model, inter regional Cohorts survival model.

Unit 4: Study of Settlement Geography

Need for the study of settlement geography; Definition of settlement; Settlement morphology, theories of settlement systems, ranking of towns; Settlements in regional context; Spatial models of location, size and spacing of settlements; gravity model.

Unit 5: Regional and Urban Settlements

Types of regions, delineation of regions, city region, structure of city region, area of influence and dominance, shadow regions, trickledown effect, Rural-urban fringe and its structure and growth; City structure, theories of urban structure, classification of land uses in an urban area; Analysis of location, structure and models of growth patterns of CBD, industrial areas and residential areas; Intra-urban and inter-urban inequalities.

Suggested Readings:

1. Ghosh S (1998), *Introduction to Settlement Geography*, Orient Black Swan Publications. Calcutta.
2. Newbold K.B (2013), *Population Geography: Tools and Issues*, Rowman & Littlefield Publishers. Lanham.
3. Singh R.Y (2002), *Geography of Settlement*, Rawat publications. New Delhi.
4. Zelinsky W (1996), *A Prologue to Population Geography*, Prentice-Hall Publications. New Jersey.

BPLN204 Planning Project Estimation

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To understand the methods of estimating planning project costs.

Unit 1: Introduction to Specifications

What is specification and why it is needed for planners; Definition and contents; Different types of specifications; Elements and attributes of specifications; Standard units

Unit 2: Specification Writing

Significance and methods of writing specifications; Issues related to housing, infrastructure, pumping, etc; General specifications for housing, city level infrastructure like water supply network, pumping stations, sewerage network, power supply, road network, street lighting, etc.

Unit 3: Quantity Surveying

Measurement of different quantities – buildings, roads, earth, water supply, sewer systems, etc.

Unit 4: Estimation

Purpose of estimation, methods of estimation, types of estimates – approximate estimates, detailed estimate, levels of detailed estimate; Determination of rates of works involved in the infrastructure services such as roads, water supply, sewer systems, etc.

Unit 5: Planning Project Estimation

Project case-study - land development cost; How to estimate development fees; Costing procedure; Raw land for different land use categories, development works, interest on investment, and phasing; Preparation of detailed development costs of a planning scheme for an approximate population of 5,000 as per norms and standards considering one element of infrastructure; Building management software like BIM and it uses in the project.

Suggested Reading:

1. Dutta, B.N (2003), *Estimating and Costing in Civil Engineering*, UBS Publishers & Distributors Pvt. Ltd., New Delhi.
2. Government of India (2003), *CPWD Work Manual of central public works Department*, New Delhi.
3. Haroon, Mohammed (2012), *A Book for Building Estimation*, Rizwan Publisher, Hyderabad.
4. Kohli, D.D and Kohli, R.C (2004), *A Text Book of Estimating and Costing (Civil)*, S.Chand & Company Ltd., New Delhi.

Note: Course to be conducted through case studies

BPLN205 Elements of Economics for Planning

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To provide essential knowledge of economics required for planners.

Unit 1: Definition and Scope of Economics

Definition of economics; Terms used in economics related to urban development; Central problems of economics; Basics of micro and macro-economics; Use of economics in planning.

Unit 2: Theory of Demand and Supply

Definition of need, demand, and supply; Law of demand and supply, types of demand; Theory of demand and utility; Elasticity of demand and supply, its use in planning; Application of supply and demand in relation to housing and infrastructure services; Perfect and imperfect market types, market demand and supply; Pricing under different market conditions and the market mechanism, Applications of theory in provisions of urban services.

Unit 3: Production and Consumption

Labour, division of labour, labour market; Theory of production - factors of production, costs, scale of production and economies of scale; Consumption - theories of consumption.

Unit 4: Distribution and Employment

Theory of income, money and employment - types of unemployment, national income (GNP and NNP), fiscal policy and inflation; Types of inflation; multipliers, Indian financial institutions.

Unit 5: Development and Investment

Classical and modern approaches, growth and development indicators; Defining development and under development; Imperfection of competition and economic role of government; Investment demand; Policies on investment- FDI and free trade, budgetary aspects and deficit; Housing investments.

Suggested Readings:

1. Benjamin S (2008), *Occupancy Urbanism: Radicalizing Politics and Economy beyond Policy and Programs,* International Journal of Urban and Regional Research, Vol. 32.3, September, 719-729.
2. Brenner N and Theodor N (2002), *Cities and Geographies of "Actually Existing Neoliberalism",* Antipode, Volume 34, Issue 3, 349-379.
3. De Souza M (2010), *Which Right to Which City? In Defense of Political- Strategic Clarity,* Interface, Vol 2(1), May, 315-333.
4. Kumar A and Ray R (2012), *Decentralized Planning in India-A Myth or a Reality?*, Development Alternatives Newsletter, August. New Delhi.

BPLN206 Elements of Sociology for Planning

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To understand the main concepts and perspectives of sociology and its related issues in the Indian context.

Unit 1: Introduction to Sociology

Definition, meaning, importance and scope; urban sociology and rural sociology – meaning and importance; levels of social organisation and evolution of social institutions; Social structure and Social systems; sociology and built form.

Unit 2: Social Institutions

Family, marriage and kinship pattern; religion and Community and significance in planning; Voluntary associations and their role in development, social groups primary, secondary and reference groups.

Unit 3: Sociological Theories and Methods

Traditional and modern theories of sociology; methods of investigation and understanding society, man and environment; culture of space and cultural ecology; Social integration and social segregation; social change and social control; Social Stratification and social inequality; Social mobility and social- inclusiveness and exclusion.

Unit 4: Sociology of India

Basic features of Indian society and culture - language, religion, caste and tribes; rural community and its relationship with urban community; Social division of urban and rural poor and poverty.

Unit 5: Planning in the Context of Social Problems

Social problems due to urban–rural migration, resettlement and rehabilitation, industrialization and urbanization; Social problems of urban community; social issues related to gender bias, crime and delinquency, violence, etc.; impact of technology in society; role of planning in addressing social issues with case examples.

Suggested Readings:

1. Giffings, Franklin. Henery (1996), *Elements of Sociology*, Macmillan & Co., Ltd., London.
2. Gyoujin Cho (1976), *Global Review of Human Settlements*, Pergamon Press, London.
3. Paul Zucker (1996), *Town and the Square*, Columbia University Press, New York.
4. Wilson R.A & D.A. Schulz (1978), *Urban Sociology*, Prentice Hall Inc., New Jersey.

BPLN201 Planning and Mapping Studio

Number of Credits	15	Subject Category	Studio
Lecture Periods/Week	0	Internal Assessment	250
Practicals /Lab/Workshop Periods/Week	15	External Jury	250
Total Periods/Week	15	Total Marks	500

Objective: To develop proficiency in preparation of basemaps and thematic maps.

Unit 1: Introduction to Maps

Types and contents of maps – topographic, cadastral, land use, administrative maps, etc.

Unit 2: Base Mapping Protocols

Choice of appropriate scale (graphic and numeric); orientation of maps; Title of sheet and lettering; Techniques of reducing and enlarging maps, legends items, notations, use of monochrome and colour.

Unit 3: Techniques of Base Map Preparation

Tracing the topographic sheets manually by identifying the regional/district boundaries, city and municipal ward boundaries, existing settlement boundaries, major water bodies, reserve forests, rocky formations, ecologically sensitive areas, major roads, major electric power lines, historical monuments of national importance, and protected defence establishments; Using of appropriate legend items, standard patterns, symbols and notations.

Unit 4: Map Analysis

Superimposition of the cadastral map to identify the revenue boundaries; Ground verification of the region/area for up-dation and modification; Land suitability analysis; Layering exercises; Techniques and application.

Unit 5: Preparation of Thematic Maps

Appreciation studies of land use classification of residential, commercial, institutional, transportation, recreation areas in small urban and/ or rural settlements; Tabulation and graphic presentation of statistical data; Use of monochrome and colour coding, black and white as presentation techniques by using internationally accepted hatching patterns.

Suggested Readings:

1. Government of India (Ministry of Urban Development and Town and Country Planning Organisation) (2015),*Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines*. Vol. 1, Ministry of Urban Development, New Delhi.
2. Peterson, G.N (2009), *GIS Cartography: A Guide to Effective Map Design*, Taylor & Francis, USA.
3. Government of India (1998), *Working With Maps*, Survey of India ,New Delhi.
4. Government of India TCPO (2004), *Guide To Preliminary Planning Surveys of Urban Areas Including Land Use Classification*, Ministry of Urban Development & Poverty Alleviation, New Delhi.

Third Semester

BPLN302 Planning Techniques

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To develop proficiency in applying suitable techniques of analysis in planning exercises.

Unit 1: Land and Population

Parameters for study of population characteristics; Land use and Land use survey methods.

Unit 2: Employment Analysis

Employment mobility and analysis of distribution vis-a-vis place of residence; Basic and secondary employment, multiplier analysis.

Unit 3: Input-Output Analysis

Multi-sector input-output modelling; Formulation of contingency tables; Input and output factors analysis.

Unit 4: Cost-Benefit Analysis

Identification of direct and indirect costs and benefits; Social costs and benefits; Present value, future worth; Discount and compound factors using formulas and standard tables; Introduction to SWOT, IRR, NPV.

Unit 5: Delineation Techniques

Gravity Model, Centrographic Technique, Distance functions.

Suggested Readings:

1. Government of India (2015),*Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines*. Vol. 1, Town and Country Planning Organisation Ministry of Urban Development, New Delhi.
2. Sachithanandan (2004), *Reading material on Planning Techniques*, Institute of Town Planners India, New Delhi.
3. Sharma, Rajendra K (2004), *Demography and Population Problems*, Atlantic Publishing House, New Delhi.
4. Wang, Xinhao & Hofe, Rainer vom (2007), *Research Methods in Urban and Regional Planning*, Springer Berlin Heidelberg, New York.

BPLN303 Planning Theory

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To understand the basic and traditional theoretical framework to establish the rationale of spatial planning as a profession.

Unit 1: Planning Theory

Understanding the concept of theory in general; Differentiating between theories *of* planning and theories *in* planning and theories *about* planning; Significance of planning theory; Definitions, various issues and their critical evaluation; Understanding the paradigms and its stages of development.

Unit 2: Rationality in Planning

Understanding rationality and sustainability in planning in general; Introduction to categories of rationality and associated paradigms; Instrumental rationality and its associated schools of planning processes; means-ends planning; Systems theory of planning; The emergence of communicative rationality.

Unit 3: Types of Planning Approaches

Introduction to synoptic, incremental, transactive, advocacy and radical theories of planning; Relating SITAR with purpose and process of planning; Reasoning and its various forms in planning - space, place and location; Participatory planning and action planning; Deductive and inductive methods; Prescriptive versus inclusive planning.

Unit 4: Theories of Urban Growth

Classical theories of urban structure - concentric zone theory, sector theory; Multiple nuclei theory, etc. Forms of cities in the developed and developing world; Smart cities, compact cities, global cities, hierarchy in global cities; Agglomerations of scale, economies of scale and urban agglomeration; Location theories, concentric zone theory, bid rent theory, sector theory; Cross border regions (CBRs).

Unit 5: Sustainability and Globalisation in Planning

Sustainable urban development, evolution of the concept, components and processes; Weak and strong sustainability; Millennium development goals; Equity in planning; Globalisation and sustainability of cities; Networked cities; Impact of information technology on urban services and economy.

Suggested Readings:

1. Davidoff, P (1965), *Advocacy and Pluralism in Planning*, Journal of American Institute of Planners, vol. 31. USA.
2. Faludi.A (1973), *Planning Theory*, Pregamon Press, Oxford.
3. Galloway.D.T, Riad .G.M (1977), *Planning Theory in Retrospect: The process of Paradigm Change*, Journal of American Planning Association, 43 (1), 62-71.
4. Mahadevia, Darshini (2003), *Globalisation, Urban Reforms& Metropolitan Response: India*, Manak Publications, New Delhi.

BPLN304 Planning for Physical Infrastructure

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: *To impart basic knowledge sets on Infrastructure, its relation to planners in settlement planning and planning and design considerations of Infrastructure development.*

Unit 1: Introduction and Basic Concepts

Definition of Infrastructure and its components, role of physical planner in planning the utilities and services; Objectives of utilities and services planning and implications for public health and environmental protection; Hydrological cycle; Introduction to the institutions related to infrastructure services.

Unit 2: Water Supply System

Water supply sources, treatment system and types, distribution system and types, pressure requirements; Water requirements for domestic and non-domestic purposes of settlements, fire fighting, seasonal variations in demand and factors affecting water demand; Standards of water demand per capita, variations of water demand and consumption, requirements of distribution and storage; pipe network analysis.

Unit 3: Storm Water System

Estimating storm run-off, Dry Weather Flow (DWF) and Storm Weather Flow (SWF), run-off co-efficient, rainfall intensity, time of concentration; Gravity flow, hydraulic gradient line, Manning's formula and nomographs, full flow and partial flow; Layout and design of storm water system; General considerations, inlets, self-cleansing velocity, non-scouring velocity, physical layout-design principles, data requirement; Rain water harvesting.

Unit 4: Sanitation

On-site detention, design procedure for on-site detention; Low cost appropriate technologies for sanitation; Sanitary sewer system, sewer network, materials used; Sewer system location and layout, data needs and procedure of planning; Quantity of sewage, standards for Indian cities, sewer appurtenances; Sewer pumping and forced main manholes.

Unit 5: Solid Waste Management

Solid waste and types, municipal solid waste management rules 2000 and 2013; Stages of solid waste management and current practices; Composting process - Indore and Bangalore methods, concepts of re-use and recycle, e-waste and bio-medical waste generation and treatment methods.

Suggested Readings:

1. *CPHEEO, "Manual on Water Supply and Treatment" & "Manual on Sewerage and Sewage Treatment" & "Manual on Solid Waste Management"*, Ministry of Urban Development, New Delhi.
2. Nathanson, Jerry A (2008), *Basic Environmental Technology, Water Supply, Waste Manangement and Pollution Control,* Fifth Edition, Vol. 1. Pearson Prentice Hall, New Delhi.
3. Shah, Charanjith S (1998), *Architectural Handbooks Series, Water Supply and Sanitation*, Galgotia Publishing Company, New Delhi.
4. Government of India (2010), *Definition of Infrastructure,* the Secretariat for Infrastructure, New Delhi. <http://www.infrastructure.gov.in/pdf/doi.pdf>.

BPLN305 Traffic and Transportation Planning

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To understand the basic knowledge of traffic surveys, infrastructure design and concepts of planning.

Unit 1: Concept, Role and Significance of Transport Planning

Various systems of transport its characteristics and role in development of a nation; Economic, political and social significance and transport development; Transport policies and programmes beforeand after independence; Current trends in road development; Traffic and transport problems and issues;Emerging concepts -TOD, NMT, MRTS and public parking.

Unit 2: Traffic Surveys and Data Collection

Vehicle types, capacity, design of survey formats and questioners; Classified volume count, origindestination, spot speed studies, parking, pedestrian volume studies, collection of travel data fromhousehold surveys, traffic assessment- traffic density, traffic flow and speed; Traffic, travel andnetwork characteristics and their significance in planning and design of transport infrastructure.

Unit 3: Road Transport Infrastructure

Road hierarchies, classification, capacity and level of service; space standards for road design, intersection types; Uncontrolled, controlled; Space sharing and time sharing junctions; Cycling and pedestrian systems.

Unit 4: Geometric Design of Road and Intersections

Vehicle characteristics and road characteristics; Components of geometric design-design speed; Horizontal and vertical alignment, network alignment planning, sight distance, cross-section elements, lateral and vertical clearance, control of axis.

Unit 5: Traffic Management

Objectives, principles and approaches for traffic management, regulatory measures, physical measures, signal control at intersections and networks, driver information systems.

Suggested Readings:

1. Kadiyali L. R (2007), *Traffic Engineering and Transport Planning*, Khanna Publishers, New Delhi.
2. Kansal P (1998), *Reading Material on Advanced Transportation Planning*, ITPI, New Delhi.
3. Government of India (2015), *Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines*. Vol. 1, Town and Country Planning Organisation, Ministry of Urban Development, New Delhi.
4. Ortuzar J (2001), *Modelling Transport*, Wiley, New York.

BPLN306 Socio-economic Structure and Spatial Planning

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To develop basic understanding of economic and sociological parameters in the context of planning and development of human settlements.

Unit 1: Urban Sociology

Definition, nature and scope of urban sociology; Concepts and theory of urban sociology, urban social institution and social organizations; Character of urban community.

Unit 2: Urbanization and Sociology

Urbanization-trends in the Global, Asian and Indian context; Urbanization and housing- housing needs in context to changing family structure and life style, social segregation and integration; Social impact assessment of urban development programmes, informal settlements and inclusion issues.

Unit 3: Urban Economics

Definition, nature, and scope of urban economics, concepts and theories of urban economics, economies of scale; Theory of rent, land use, welfare aspect of land rent; Measurement of poverty.

Unit 4: Urbanization and Economics

Urbanization in the context of economic system; Housing and economic importance including capital, and market; Urban Economic model related to land; Variations in rent, wage and density; Economic performance and efficiency in urban context.

Unit 5: Urban Socio-Economic Aspects and Spatial Planning

Urbanization and urbanism – Social aspect of rural-urban migration and its impact on land use planning; Social planning and programs to reduce the poverty; Role of NGO's and community in physical planning in India abroad; Economic dynamic of urban areas; Economic planning and programs to reduce urban poverty; Role of bank and other economic institutions in physical planning in India abroad.

Suggested Readings:

1. Arthur Kohun (1953), *Histroy Builds the Towns*, Lund Humphries. London.
2. Bhatt Caste (1975), *Class and Politics*, Manohar Book service, Delhi.
3. Carter H (1972), *The Study of Urban Geography*, Edward A Old, London.
4. Chapin F.S (1965), *Urban Land use Planning*, Higg & brothers, New York.

BPLN301 Built Environment and Site Planning Studio

Number of Credits	15	Subject Category	Studio
Lecture Periods/Week	0	Internal Assessment	250
Practicals /Lab/Workshop Periods/Week	15	External Jury	250
Total Periods/Week	15	Total Marks	500

Objective: To do hands on experience on the built environment and components of site planning

Unit 1: Introduction to Site Planning

Site planning process, site and user analysis including built environment and the quality of life.

Unit 2: Site Analysis

Site analysis – inventory, topography – understanding contours, cut and fill, geomorphic approach to site development, soils, slopes natural drainage systems, implications in planning and development of the site; General principles and factors to be considered in planning and development of service networks, zones, and location of activities and buildings.

Unit 3: Study of Built Environment

Factors and concepts related to built environment – climate, site characteristics, landform, visual elements, social and behavioural factors and space utilisation.

Unit 4: Study of Existing Layouts

Study and documentation of a planned housing layout; Blocks, building mass and void analysis, built form and open space relationships, three dimensional relationship of spaces, density, footprints, layout regulations, infrastructure components, circulation, landscape elements, etc. study of residential, commercial, institutional or industrial neighbourhoods.

Unit 5: Project

Preparation of a layout - residential, commercial, institutional or industrial uses; Selection of appropriate case studies, data collection - primary and secondary data as applicable; Analysis, evaluation of standards, formulation of alternative strategies and final proposal.

Suggested Readings:

1. Dechiara, Joseph., Panero, Julius and Zelnik, Martin (2001), *Time-Saver Standards for Interior Design and Space Planning*,.Mc-Graw hill, Bostion.
2. Dixon, John (2007), *Urban Spaces*, Visual Reference, Dixu.
3. Lagro, J.A.Jr (2001), *Site Analysis Linking Program and Concept in Land Planning and Desing*, John wiley, Canada.
4. Government of India (2015), *Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines*. Vol. 1, Town and Country Planning Organisation, Ministry of Urban Development, New Delhi.

Fourth Semester

BPLN402 Advanced Geoinformatics

Number of Credits	3	Subject Category	Lab
Lecture Periods/Week	0	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	3	External Jury	50
Total Periods/Week	3	Total Marks	100

Objective: Introduce advanced concepts of geo-informatics; integration and analysis using GIS, RS and GPS; applications in planning.

Unit 1: Introduction to GIS

Concepts and components - thematic modelling, types of GIS, vector features – point, line, polygon and annotation.

Unit 2: Digital Map Preparation

Creation of vector data- spatial referencing and adjustment, working space and print space, digitization / vectorisation, working with different layers, grid, title panel; Quality check - topology creation, error check and correction; attribute data creation, integration and query.

Unit 3: Analysis and Modelling in GIS

Spatial analysis – multi-criteria overlay, distance, proximity, buffer; Attribute forspatial modelling; 3D modelling - digital terrain modelling, triangulated irregular network; Model builder.

Unit 4: Applications in Urban Planning

Case studies - advanced spatial econometric analysis, land suitability and impact assessment.

Unit 5: Emerging Concepts and Trends

Dynamic GIS, geo-coding and geo-tagging - integration of GIS and GPS, web-enabled GIS; Spatial Data Infrastructure.

Suggested Readings:

1. Elangovan, K. (2010), *GIS: Fundamentals, Applications and Implementations*, New India Publishing Agency, New Delhi.
2. Kennedy, M. (2013), *Introduction to Geographic Information Systems with ArcGIS: A Workbook Approach*, Wiley. Denver.
3. Government of India, (2010), *Guidelines for GIS Mapping. MIS Development and Integration of GIS with MIS*, Ministry of Housing and Urban Poverty Alleviation, New Delhi.
4. Piotr, Jan Kowski (2010), *Regional and Urban GIS: A Decision Support Approach*, Jaipur Publishers, Rowat.

BPLN403 Contemporary Planning Theory

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: Exposure towards alternative development theories, application of theories to contemporary planning practice and also the state of the art in planning theory.

Unit 1: Systems Approach to Planning: Rational Comprehensive Planning

Understanding systems theory in general; Main characteristics of rational comprehensive planning; Components of systems based planning; Key disadvantages with systems view of planning.

Unit 2: Incremental, Transactive, Advocacy and Radical planning

Introduction to alternative planning paradigms; Incremental planning and disjointed incrementalism; transactive planning and mixed scanning; Advocacy planning; radical planning approaches – equity, social mobilisation and social change.

Unit 3: Participatory Planning

Ladders of citizens' participation and the art of muddling through; Models of public private partnership;Public interest and its forms, history and significance of public participation; The role of market in planning; Public participation and empowerment; Fundamentals of communicative rationality in planning; Models of communicative and collaborative planning.

Unit 4: Uncertainty in Planning and the Role of Planners

Matrix of uncertainity; Agreed goals and known tools; Disagreed goals and unknown tools; Leapfrogged decision making, premature programming and premature consensus; Implications of uncertainity; risk reduction; Role of planners.

Unit 5: Political Economy and Cities: New Public Management (NPM) Theories

Role of market in development; Economic planning vs. physical planning; Models of NPM; Efficiency and efficacy in planning; Transparency and delegation of planning services; Global cities, networks and smart cities; Innovation in planning; Role of information in planning.

Suggested Readings:

1. Dahiya, Bhagavan (1989), *Planning Theories and Techniques in India: A Critique*, Neha Publishers & Distributors, Concept Publishing Co, New Delhi.
2. Jean Hillier (eds.) (2008), *Contemporary Movements in Planning Theory*, Ashgate, London.
3. John Forester (1999), *The Deliberative Practitioner: Encouraging Participatory Planning Processe*, MIT Press, NY.
4. Tore Sager (2013), *Reviving Critical Planning Theory: Dealing with Pressure, Neo-liberalism, and Responsibility in Communicative Planning*, Routledge, London.

BPLN404 Civic and Social Infrastructure Planning

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To cover various aspects related to concepts and components of civic and social infrastructure.

Unit 1: Social Infrastructure

Components and types of social infrastructure; Education facilities, categories and standards; Health care facilities, categories and standards; socio-cultural faculties and other infrastructure services include milk distribution centers, police station and posts, control room, fire stations and disaster management center and etc.; Provision of open spaces, parks, playgrounds, cremation grounds and multipurpose grounds category wise.

Unit 2: Energy

Power, sources of generation, transmission and distribution, national grid, high tension lines and buffer; gas storage and supply, telecommunication lines; locating all infrastructure lines within the row in efficient road cross sections; Planning the local circulation pattern in relation to adjoining land use and on street activities; Integration of underground infrastructure planning with local circulation planning and design; Planning considerations of regional infrastructure, airports, seaports, trade centers, etc.

Unit 3: Components of Typical Utility Networks in an Urban Area

Appraisal and critical evaluation of an existing road network, water supply situation, drainage and sewerage system, and solid waste management situation in a given urban context; Nature of the problem in utilities and services; Relations between land use change, demographic change and development pattern with utility services demand, project estimates.

Unit 4: Smart Infrastructure

Smart cities and its infrastructure; Concepts and application of Integrated Urban Water Management (IUWM); Decentralised Wastewater Treatment Systems (DEWATS); Application of information technology in infrastructure services; Low cost treatment systems.

Unit 5: Institutional Aspects of Utilities Planning

Role of line agencies in municipal areas; Jurisdiction and scope of work of line agencies; Cost recovery methods of infrastructure planning and development projects; Growth pay itself, development charge; Service Level Benchmarks (SLBs) and reforms.

Suggested Readings:

1. Government of India (2009), *Service Level Benchmarking; Water Supply, Waste Water, Storm Water and Solid Waste*, Ministry of Urban Development, New Delhi.
2. Government of India (2015), *Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines*. Vol. 1, Town and Country Planning Organisation, Ministry of Urban Development, New Delhi.
3. Rastogi, Anupam (2007), *India Infrastructure Report,* 3i-network, New Delhi.
4. Water Management Team (2010), *Decentralised Wastewater Treatment: A Way to Manage Septage in Shimla,* Center for Science and Environment. New Delhi.
   http://www.iitk.ac.in/3inetwork/html/ reports/ IIR2007/01-The%20Infrast.pdf

BPLN405 Urban Renewal and Re-development

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To explore urban design as a component of planning and design of traditional and new towns; and aspects of heritage, values and urban conservation.

Unit 1: Introduction

Urban design - definition and methodologies to understand the urban form, components of urban design, scope and limitations; Scale and relation between architecture, urban design and planning; Brief historic review of the development of the urban design discipline and principles; Urban design theories.

Unit 2: Evolution and Morphology of Cities

Study and analysis the concept of urbanization across the time and how city took the shape; Physical and non physical determinants of urban form, topography and environment impact on city formation, time line, world view and principles of city planning and design; Early cities, temple towns, medieval cities, colonial cities, new towns, contemporary development; Global cities.

Unit 3: Components and Methodology

Methods of urban survey, urban design case study, documentation and representation, type and typology, urban structure, urban form, urban experience, urban design principles.

Unit 4: Reading the City

Reading the city through its various process of development, focusing on to its cultural, social, and economical parameter; Study and analysis of the cities through existing built form, process of city extension, and transformation.

Unit 5: Urban Renewal and Conservation

Urban renewal and conservation of historic core areas, understanding its cultural, social and heritage value reflected on the built form; Historic overview of urban renewal, development strategies for regeneration of inner city areas, introduction to conservation, heritage concepts of historic zones and world heritage sites, importance of charters, archaeological acts, conservation acts and legislation, concepts and approaches to urban conservation, institutional framework for urban conservation and renewal strategies.

Suggested Readings:

1. Jonathan, Barnett (1982), *An Introduction to Urban Design*, Harper and row, Publishers, New York.
2. Morris A.E.J., (1994), *History of Urban Form*, Longman, Routledge; 3rd edition, New York.
3. Spiro, Kostof (1991), *The City Shaped*, Bulfinch Press, London.
4. Spreiregen, Paul D., AIA (1965), *The Architecture of Towns and cities,* McGraw-Hill Inc; 1st edition, New York.

BPLN406 Housing and Real Estate Development

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To learn the basic concepts, tools, techniques for evaluating the real estate and understand how the market forces and regulations influence the real estate development.

Unit 1: Land and Housing

Definition of real estate and its importance in urban & regional planning, housing and residential areas - characteristics, economic concepts, objectives and scope; Land market and its type; Land supply &demand; Development and controls; Laws and regulations related to ownership and tenancy, contract law, pricing, transaction.

Unit 2: Community and Housing Development Process

Understanding a community, its characteristics, basic entitlements, strengths and weaknesses; Housing tenure, aspects of informal tenure, rights and justice with respect to tenure; Socio-economic implications behind formation of slums, critical characteristics of slums, improvements of slums, sites and services schemes, squatter upgrading; factors affecting residential location; Theoretical knowledge of ecological, neo-classical, institutional approaches to housing; Housing subsystems and their characteristics; Formal and non-formal housing; Public and private sector housing development process; Inner city housing.

Unit 3: Real Property Markets

Heterogeneity and imperfections, valuation of real property principles and practices; Private ownership and social control of land; Disposal of land; Land use restrictions, compensation and requisition application and purpose of capital gain tax and its types; Debit and equity models; Highest and best use analysis; Usage of argus real estate analysis software.

Unit 4: Factors Influencing Locational Decisions

Location Analysis, residential, industrial, commercial and institutional in the light of location theories in intra-regional and inter-regional context; Techniques of cost benefit analysis of urban development projects; Housing affordability as a function of real estate market's interaction with the regulatory environment.

Unit 5: Other Forms of Real Estate Development

Case studies of real estate development in public, private, partnership sectors; Development of real estate as a tool for controlling land and property prices; Transaction and renting of real estate, lease deeds/ sale deeds, sale documents, registration; Mortgage and pledging; Institutions and organizations related to real estate.

Suggested Readings:

1. David Geltner, Norman G. Miller, Jim Clayton, and Piet Eichholtz (2007), *Commercial Real Estate Analysis and Investments,* Second Edition, by Cengage Learning.
2. Government of India (2015), *Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines.* Vol. 1, Town and Country Planning Organisation Ministry of Urban Development, New Delhi.
3. Ratcliffe, John, Micheal Stubbs and Mark Shepherd (2001), *Urban Planning and Real Estate Development (Natural and Built Environment)*, Spon Press, New York.
4. William B Brueggeman and Jeffrey D. Fisher, *Real Estate Finance and Investments*, McGraw-Hill Higher Education.

BPLN401 Transportation Planning Studio

Number of Credits	15	Subject Category	Studio
Lecture Periods/Week	0	Internal Assessment	250
Practicals /Lab/Workshop Periods/Week	15	External Jury	250
Total Periods/Week	15	Total Marks	500

Objective: To gain experience on knowledge related to traffic surveys, their analysis and interpretation in real traffic and transportation problems.

Part A: Basic Surveys

Conduct, analyse, interpret, and produce reports on various traffic and transport planning surveys; Road and intersection inventory, traffic volume counts, origin destination, spot speed, speed and delay, parking, pedestrian, public transport surveys, etc.

Part B: Transport Planning Project

Two comprehensive field-based studio assignments spread over the semester, which shall cover the following:

Understanding of traffic and transportation related problems at the local / sub-city level and developing appropriate plans (using tools like traffic impact assessment for change of land use, appraisal of local transport projects, area level traffic management, and circulation plans, etc.)

City level appraisal of traffic and transportation issues and different transportation systems, mobility planning, interrelation of traffic problems with development issues; Traffic impact assessment proposals for given site conditions; Interpretation of data, working on various strategies, suggesting transport systems and policy based proposals for the problems and constraints of a particular settlement.

Suggested Readings:

1. Government of India (2015), *Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines*. Vol. 1, Town and Country Planning Organisation Ministry of Urban Development, New Delhi.
2. Kadiyali L. R. (2007), *Traffic Engineering and Transport Planning*, Khanna Publishers, New Delhi.
3. Kansal P (1998), *Reading Material on Advanced Transportation Planning*, ITPI, New Delhi.
4. Ortuzar J (2001), *Modelling Transport*, Wiley, New York.

Fifth Semester

BPLN502 Planning and Management of Green and Open Spaces

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To understand open spaces as a critical element of value and design in planning. To impart open space planning and design methodologies through case study site planning.

Unit 1: Elements of Open and Green Spaces

Green & open spaces as an outcome of natural processes; Principles and techniques of design with landform, water and vegetation; The role of surface materials, outdoor fittings and structures; open space and Landscape elements. Man-made landscapes in history; A comparative study of the major traditions of landscape design in the east and west in relation to concepts of space and the use of landscape elements.

Unit 2: Urban Open Spaces

Characteristics and components of open space patterns in towns and cities (traditional and contemporary) basic types; streets, squares, plazas, gardens, ghats and maidan, public parks at district ,local and neighbourhood levels, park systems; Green & open space related Landscape design interms of land-use, circulation networks and activity; Street furniture as a component of urban landscape.

Unit 3: Urban Green Spaces

Design with nature concept, principles of understanding and evaluating an existing landscape; Land suitability analysis; The landscape concept and urban green space for site planning and recreation; The role of vegetation: environmental benefits, functional requirements, aesthetic considerations; Typical situations and criteria for design with plants and selection of species, grading in relation to existing contours, plinth levels, road alignment and storm water drainage; Principles of cut and fill.

Unit 4: Sports and Play fields

Multipurpose open spaces / maidan, contested spaces; Hierarchy and standards for sports and play fields, role of public / private institutions.

Unit 5: Managing Open Spaces

Open spaces in master plans, role of government and NGOs, community participation, legal measures for managing open spaces – parks and play grounds; case studies.

Suggested Readings:

1. Clare, Copper Marcus and Carolyn, Francis (eds.) (1997), *People Places: Design Guidelines for Urban Open Spaces*, John Willey & Sons.
2. Government of Delhi (2001), *Delhi Master Plan 2021*, Delhi Development Authority, New Delhi.
3. Marsh W (2010), *Landscape Planning*, Wiley, Danvers.
4. Government of India (2015), *Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines*. Vol. 1, Town and Country Planning Organisation, Ministry of Urban Development, New Delhi.

BPLN503 Integrated Planning for Informal Sector

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To provide exposure to the concepts and issues involved in the planning and management of informal sector.

Unit 1: Understanding Informality

Defining informality; types and characteristics of informal; Linking informal sector and poverty, socio-economic deprivation and informal sector; Growth of informal sector; Poverty alleviation programmes, impact of macro-economic structural adjustment policies on poor and marginal urban households.

Unit 2: Migration and Informal Sector

Rural urban migration and growth of informal settlements; Migratory patterns, characteristics of migrants, growth of informal sector; City development projects and informality, linking landuse planning with informal sector; Insensitive institutional response and informality.

Unit 3: Informality in Commercial Sector

Formal and informal economy at the local scale; Types and categories of informal sector service providers; Advantages and disadvantages in the Indian context; Statistics related to employment and examples of integration between formal and informal sector market entities; Dependency factors of local economy on formal sector; Contribution of informal sector in city economy and employment.

Unit 4: Provision of Basic Urban Services

Concept of basic needs and quality of life; Socio-economic deprivation and environmental degradation in informal settlements; Legal and institutional constrains in provision of services; Provision of basic urban services through target group approach; Budgetary allocation mechanisms; Role of NGOs as facilitators between local government and the poor towards their basic needs.

Unit 5: Dealing with Informality

Institutional reforms - approaches to address informality; Participatory planning approach; Capacity building and formal livelihood generation; Credit accessibility; Linking with formal economy; Space consideration for informal sector; Inclusion Vs Exclusion of informal sector, Case studies from India and other developing countries; Norms and standards of informal sector.

Suggested Readings:

1. Ali Sabir (2006), *Dimensions of Urban Poverty*, Rawat Publications, New Delhi.
2. Asthana MD and Ali, Sabir (2004), *Urban Poverty in India: Issues and Policies*, Uppal Publication House, New Delhi.
3. Deden R (2007), *Urban Planning and the Informal Sector in Developing Countries*, Planetizen.
4. Sugranyes A and Mathivet C (ed) (2010), *Cities for All, Proposals and Experiences towards the Right to the City*, Habitat International Coalition.

BPLN504 Development Planning and Management

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: *To focus on the basic concepts of development as a critique to the neoliberal economic policies and introduce to contemporary indicators of development with the help of major development theories.*

Unit 1: Elements of Development

Concept, definition and indicators of development; Growth versus Development; Imperialism and north-south dichotomy; Paradigm shift in development studies discourse; Different approaches of development; Inequality and growth; Review of national and global development reports.

Unit 2: Models of Development

Dualistic approach in development; Theories related development- Classical economic theories, neo-classical models, marxist theories, structuralist model, dependency theory, neo-liberal model, capability approach.

Unit 3: Issues in Growth and Development in India

Planning in India; Development models in Indian planning; Process of decentralization in development discourse with special reference to India; Spatial implications of economic change, 74th Constitutional Amendment Act and empowerment of local bodies.

Unit 4: Political Economy and Planning

Concept and approaches of political economy; Political economies of cities; Gentrification and spatial injustice; Aspects of structural adjustments in economic policies and on spatial scale.

Unit 5: Globalization and Neoliberalism

Concept of global cities and hierarchy of settlements; Concept and approach to regional development; Inequality and regional disparity; Theories related to regional development; Concept of growth pole and agglomeration economies.

Suggested Readings:

1. Jhingan, M.L (2004), *The Economics of Development and Planning*, Vrinda Publications Ltd., New Delhi.
2. Kurien, N.J (2002), *Widening Regional Disparities in India*, Planning Commission Publication, New Delhi.
3. Neil, Brenner and Roger (Ed.) (2005), *The Global Cities Reader*, New York, Routledge.
4. Sassen Saskia (2007), *Elements for Sociology of Globalization*, W.W. Norton, New York.

BPLN505 Environmental Planning and Management

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: Understand environmental consciousness in planning and methods to assess implications of planning and development on natural resource base.

Unit 1: Environmental Resources

Environmental resources, meaning and variation; Environmental planning versus environmental Management; Setting the environmental baseline at site, settlement and regional levels; Understanding environmental commons and their significances; Energy as parameter of analysis for being environmentally sensitive.

Unit 2: Typology of Environmental Problems

Green and brown agenda approaches to environmental issues; Understanding Indian environmental movement; Urban environmental problems; Regional environmental resources and threats – eco-sensitive zones, biodiversity zones, watersheds, acquifiers, wetlands, etc.

Unit 3: Environmental Policies and Law

Global and National policies on environment; Environment in five year plans; Legal tools available for protection of environment, environmental awareness and education in India; Agencies involved in environment protection - NRDMS, local biodiversity boards, national green tribunal, state environmental impact assessment authority, pollution control boards; national wildlife board.

Unit 4: Environmental Impact Assessment

EIA – meaning, significance and framework; Methodologies – checklist, matrices, network and social cost-benefit analysis; Sources and acquisition of environmental information; Environmental land use classification; Environment impact studies of development projects.

Unit 5: Sustainable Environment

Environmental zones, environmental parameters for planning of tourism, environmentally sensitive areas, preservation and improvement of human habitat; Effects of soils, vegetation and drainage on spatial planning; Effects of soils, vegetation and drainage on spatial planning.

Suggested Readings:

1. Allaby, M (2003), *Basics of Environmental Science*, Routledge, London.
2. Cedric Pugh (ed.) (2010), *Sustainable Cities in Developing Countries*, Earthscan, London.
3. Murck, B (2006), *Environmental Science*, John Wiley & Sons. New Jersey.
4. Randolph, J (2012), *Environmental Land Use Planning and Management*, Island Press,Washington

BPLN506	Planning Legislation		
Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: Aware of the planning laws, legislations, acts and regulations at different jurisdiction.

Unit 1: Concept of Law

Sources of law (custom, legislation and precedent); meaning of the term of law, legislation, ordinance, bill act, regulations and bye-laws; Doctrine of separation of powers; Judiciary, legislature and executive – rule of law – significance of law and its relationship to urban planning; Provisions regarding property rights; Legislative competence of state and central governments to enact town planning, legislation, benefits of statutory backing for planning schemes; Eminent domain and police powers; Indian Constitution, provisions regarding property rights.

Unit 2: Legislation for Use and Control of Land

Introduction to Land Acquisition Act, 1894; Case studies related to Land Acquisition Act highlighting nature of contention, parties in dispute and the decisions in specific planning disputes; Betterment charges and compensation provisions in planning laws; Judicial precedents; Legislation controlling use of land; NOC, building permission, building bye-laws, etc.; Significance of land development control; ULCRA and its significance.

Unit 3: Town and Country Planning Laws

Model bills on Planning, urban development corporations, etc., status of the Institute of Town Planners, India and overview of framework of rules and provisions made in the ITPI chapter; Legislations relating to urban conservation and restoration, historical movements, archaeological sites and remains of national importance; 73rd and 74th Constitutional Amendment Act of India.

Unit 4: Environmental Legislation

Evolution of environmental laws in India; Law of Torts, the first environmental law; National Environmental Policy Act – Pollution Control Acts – Air, Water and EP Acts (a critical appraisal). Seminar on Forest and Wildlife Act; International environmental laws.

Unit 5: Built Environment and Legal Implications

Rent control legislation – variations over the states oblems; Housing co-operatives related legislation and other forms like non-trading corporations; slums-related legislation – variations over the states, important sections, their implications, etc., problems with actual use; Legislation on related to property transactions (Transfer of Property Act, Income Tax related, etc.); PILs and writs as a tool of check.

Suggested Readings:

1. Farazmand, A (1999), *Globalization and Public Administration*, Public Administration Review, pp. 509–522.
2. George, M (1994), *Panchayati Raj: From Legislation to Movement*, Concept Publications, New Delhi.
3. Scheppele, K.M (1994), *Legal Theory and Social Theory*, Annual Review of Sociology, 20, pp. 383–406.
4. Seervai, H. M (1998), *Constitutional Law of India*, New Delhi.

BPLN501 Area Development Planning Studio

Number of Credits	15	Subject Category	Studio
Lecture Periods/Week	0	Internal Assessment	250
Practicals /Lab/Workshop Periods/Week	15	External Jury	250
Total Periods/Week	15	Total Marks	500

Objective: Practical exposure towards planning and development process at the lowest planning level of a city, i.e., the neighbourhood level, with an intention to strategise and plan within the ambit of a given master plan.

Unit 1 and Unit 2: Part A - Fundamentals of Local Development and Planning

Introduce different approaches to plan making with a focus on local or sub-city level planning and development of standards. Appraisal of comprehensive development plans, structure plans, zonal plans and sector plans with an intension to understand its local implications.

Conduct, analyse, and interpret findings of detailed primary surveys on different aspects of built form - land use and utilisation, building footprints, floor-wise land utilisation, building and population density, infrastructure needs, etc. Conduct key informant interviews, stakeholder mapping and profiling, case study interviews and questionnaire based surveys to develop detailed local development profile covering all spatial and socio-economic aspects of development.

Unit 3, Unit 4 and Unit 5: Part B - Area Development Planning Project

One comprehensive field-based planning studio assignment spread over the semester, which shall lead to an 'Area Development Plan' for parts of a chosen city. The area development plan to be prepared shall analyse and strategise on aspects of land and building use, local development regulations, planning standards, building bye-laws, local circulation and transportation aspects, building footprints, utilities, local economic base, local environmental conditions, conservation and urban design, and other aspects deemed contextually relevant. Analysis is to be detailed at the plot level.

The project shall essentially be group work with each group focussing holistically on one case neighbourhood. Two or three neighbourhoods may be taken up for analysis simultaneously in the same city. Area development planning exercise is to be contextually relevant to the framework of the existing city-level statutory plans. The area development planning exercise is also to be sensitive to the local stakeholders' needs, issues, potential and priorities and be aligned to the role of the local market players.

Suggested Readings:

1. Alexander Garvin, (2013), *The Planning Game: Lessons from Great Cities*, W.W.Norton & Company, USA.
2. Anthony Townsend, *Smart Cities: Big Data, Civic Hackers and the Quest for a New Utopia*, W.W.Norton & Co, USA.
3. Ballaney, Shirley and Patel, Bimal (2009), *Using the 'Development Plan – Town Planning Scheme, Mechanism to Appropriate Land and Build Urban Infrastructure*, India Infrastructure Report, 3iNetwork, IDFC, Oxford University Press, New Delhi.
4. Government of India (2015), *Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines*. Vol. 1, Town and Country Planning Organisation, Ministry of Urban Development, New Delhi.

Sixth Semester

BPLN602 Regional Planning

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To understand the growth and expansion of human settlements within the contextual framework of regions and the approach to planning them.

Unit 1: Regions

The nature of a region, functional regions and formal regions, regional specialisation, developmentand growth of regions; Regionalisation, inter-regional trade and factor movements; Settlements patterns, hierarchy; Rural and urban continuum, role of cities in regional development.

Unit 2: Regional Economics

Individual location decisions, transfer costs, locational patterns, markets, existence, conditions andsize, market locations and regional development, inter and intra regional economic analysis.

Unit 3: Regional Analysis

Techniques of delineation of regions; centrographic analysis; input-output analysis – income andexpenditure multipliers; inter and intra regional economic analysis; Multivariate analysis ofindustrial groupings, principal components and factor analysis, sectoral shift analysis, rank size rule.

Unit 4: Regional Planning and Development

Regional development; Balanced and unbalanced development; under development; Models ofregional development; Regional planning processes; identification of plan objectives; Collection,classification and analysis of data; Norms and standards for regional planning; Role of district planningcommittees (DPC) and metropolitan planning committees (MPC); Settlement pattern, population andresource allocation/distribution; Environmental concerns and protection; alternative strategies; Implementation and financing strategies.

Unit 5: Case Studies

Selected case studies from across the country and abroad.

Suggested Readings:

1. Birch, Eugenie. L (2008), *The Urban and Regional Planning Reader* (Routledge Urban Reader Series), Routledge, USA
2. Hall, Peter (2002), *Urban and Regional Planning*, Routledge, London and New York.
3. Mishra, R.P (1992), *Regional Planning: Concepts, Techniques, Policies and Case Studies*, Concept Publishing Company, India.
4. Wang, Xinhao & Hofe, Rainer vom (2007), *Research Methods in Urban and Regional Planning*, Springer Berlin Heidelberg, New York.

BPLN603 Planning Practice

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: Developing understanding of planning institutions at various scales, planning tools and models of collaborative implementation mechanisms; professional scope and ethics.

Unit 1: The Profession, Roles, Responsibilities and Ethics

Introduction to Urban and Regional Planning; Recent reforms in the planning system; Planning practice and classification of assignments; Spatial planner and his qualities and responsibilities; Clients in planning practice; ITPI and its scope.

Unit 2: Professional Practice in the Public Sector

Planning practice at national level, interstate level, state government level, district level, metropolitan level and local level; Consultancy practice in public sector; Role of government as facilitator.

Unit 3: Initiation of the Private Sector in Planning Practice

Need for private sector involvement; types of private sector participants, consultants, contractors and developers; systems of private sector participation.

Unit 4: Professional Practice in the Joint Sector

Understanding Joint sector; Public –private partnership; Models of PPP (case based approach).

Unit 5: International Urban Planning Practice

Effect of liberalization, Privatization and globalization on planning practice; Models of supply of services; understanding of GATS (General Agreement on Trade in Services).

Suggested Readings:

1. Ahluwalia, Isher J., Ravi,Kanbur and Mohanty, P K (2014), *Urbanisation in India, Challenges, Opportunities and the Way Forward*, SAGE Publications Pvt. Ltd., New Delhi.
2. Kulshreshtha, S.K (2012), *Urban and Regional Planning in India - a Handbook for Professional Practice,* SAGE Publications Pvt. Ltd., New Delhi.
3. Kulshrestha, S. K (2006), *Dictionary of Urban and Regional Planning*, Kalpaz Publications, New Delhi.
4. Government of India (2015), *Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines.* Vol. 1, Town and Country Planning Organisation, Ministry of Urban Development, New Delhi.

BPLN604 Project Formulation and Appraisal

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: Expose to various of project planning, management, implementation and appraisal.

Unit 1: Introduction to Project Planning

Introduction to Projects, Nature of planning projects, Project life cycle, Methodology for project identification and formulation; Detailed project report, and feasibility studies, Concepts of pay-back period, Internal Rate of Return (IRR), DCF, Net Present Value (NPV), Cost Benefit Ratio (CBR), financial cost-benefit analysis, economic cost benefit analysis.

Unit 2: Project Formulationand Appraisal

Concept of appraisal, Project appraisal, Technical/Economic/Financial/Organisational criteria, appraisal criteria (NPV/ B/C. Ratio/ IRR) – financial analysis, capital costs, financial viability, debt servicing, income and expenditure statement, project balance sheets, rate of returns; social cost benefits analysis – rationale for SCBA, UNIDO approach.

Unit 3: Project Management

Project characteristics; techniques of management, Importance of project management; reasons for shortfall in performances; critical path, PERT & CPM; Concepts of project organization, contracting, procurement and recruitment budget; Fund flow statement and stabilization; Organization of project, matrix organization, task forces, project teams; Monitor and control of project; Tools and techniques for project management.

Unit 4: Pre-implementationPlanning Phase

Work break down structure; Network analysis; CPM, PERT; Resource levelling and allocation; Time-cost trade off aspects.

Unit 5: Project Implementation, Monitoring and Evaluation

Importance of Project implementation, stages of implementation; Actors in projects implementation; project monitoring; Meaning objectives and significance; Monitoring techniques; Integrated reporting, milestones, time and cost over-run and under runs, unit index techniques; Project evaluation; Techniques of project evaluation; Input analysis, financial cost-benefit analysis, social-cost benefit analysis; Case studies in Urban and Regional planning projects.

Suggested Readings:

1. Bennett, Lawrence F (2003), *Management of Construction: A Project Lifecycle Approach,* Butterworth Heinemann, UK.
2. Carmichael, David G (2006), *Project Planning, and Control,* Taylor and Francis, UK.
3. Kerzner, Harold R. (2013), *Project Management: A Systems Approach to Planning, Scheduling, and Controlling*, John Wiley & Sons, New Delhi.
4. Lester, Albert (2007), *Project Management, Planning and Control*, Butterworth Heinemann publishing house, United Kingdom.

BPLN601 Master Plan Studio

Number of Credits	15	Subject Category	Studio
Lecture Periods/Week	0	Internal Assessment	250
Practicals /Lab/Workshop Periods/Week	15	External Jury	250
Total Periods/Week	15	Total Marks	500

Objective: Impart techniques, tools and methods and preparation of a comprehensive development plan for a small town/city.

Unit 1 and 2: Part A - Regional Setting and Vision Formulation

The studio exercise shall focus on the preparation of master plan for an urban settlement. The exercise may carry a predetermined focus such as planning for tourism, energy conservation, heritage, transit oriented development, etc., as deemed necessary for the chosen settlement.

The first part shall involve study of the regional setting and existing statutory plans within which the settlement functions. The second part shall be formulating vision and goals for the settlement as a whole and sectors in detail. Appraisal of sector plans with an intension to understand different components of the master plan and their inter-linkages shall be done. This is to be followed by a detailed field based survey exercise.

Unit 3: Part B - Sectoral Appraisal

Students shall form smaller groups to analyse different sectors (landuse, housing, traffic and transport, economy, environment, infrastructure, etc.). The exercise shall analyse and evolve detailed strategies on all aspects of development with a sectoral approach.

Unit 4 and Unit 5: Part C - Preparation of Master Plan

Any one of the sectors or areas may be detailed in depth depending on the context and need of the city. There shall be periodic integration and debate exercises for cross-sectoral synergy. The master plan exercise is to be sensitive to the local stakeholders' needs, issues, potential and priorities.

Suggested Readings:

1. Governament of India (2010), *Managing Urban Growth Using the Town Planning Schemes in Andhra Pradesh*, Center for Good Governance, Ministry of Urban Development, TCPO. Hyderabad.
2. Dutsche Gesellschaft für Internationale Zusammenarbeit (2012), *Land Use Planning; Concepts, Tools and Application*, BMZ, Federal. Ministry for Economic Cooperation and Development, Germany.
3. Government of India (2015), *Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines*. Vol. 1, Town and Country Planning Organisation, Ministry of Urban Development, New Delhi.
4. Government of India (2011), *Report of the Working Group on Urban Strategic Planning*, Steering committee on urban development and management, Ministry of Housing and Urban Poverty Alleviation, New Delhi.

BPLN611 Freight Transport and Logistics Management (Elective-I)

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To possess a good understanding of freight transport and acquire fundamental concepts and principles in logistics.

Unit 1: Introduction to Freight Transport

Transport and freight movements-principles, types, role and components; Freight transport characteristics-types of freight and characteristics, market segments; Organisational structure of freight transport industry; Freight transport costs and charges-types, principles of discounting.

Unit 2: Planning and Operation of Freight Transport

Planning Freight Transport; Route planning and scheduling freight transport services; Collection, storage and distribution centres; Mechanisms for controlling operations; Regulation and enforcement of freight transport.

Unit 3: Introduction to Logistics

Origin and definition-purpose and scope; Types of logistics; concepts in logistics and physical distribution - distribution and Inventory; Organisational and logistics objective; Factors in logistics decision making; Logistics solution.

Unit 4: Warehousing and Inventory

Inventory-definition and characteristics; The concept of warehouse-definition, functions, types, factors determining location, type, size and number; Warehouse Principles-Flow, stock separation, unitisation, stock rotation; Storage and materials handling; Warehouse processes.

Unit 5: Key Issues in Freight Transport and Logistics Planning

Managing speed and reliability in freight transport; Problems with traditional approaches to inventory planning; New inventory requirements; lead-time gap; Inventory and time; Inventory planning for manufacturing; Inventory planning for retailing; Security and safety; Logistics and the environment.

Suggested Readings:

1. Bowersox, D. J., Closs, D. J. and Cooper, M.B. (2007), *Supply Chain Logistics Management*, McGraw-Hill Education, Singapore.
2. Harrison, A. and Hoek, R. Van (2002), *Logistics Management and Strategy*, Pearson Education Limited, England.
3. Hesse, M. (2008), *The City as a Terminal: The Urban Context of Logistics and Freight Logistics,* Ashgate Publishing Ltd., England.
4. Stroh, M. B. (2006), *A Practical Guide to Transportation and Logistics*, Logistics Network Inc., USA.

Seventh Semester

BPLN702 Dissertation - Formulation of Research Proposal

Number of Credits	3	Subject Category	Lab
Lecture Periods/Week	0	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	3	External Jury	50
Total Periods/Week	3	Total Marks	100

Objective: To initiate the terminal project exercise by enabling students to identify a topic and then develop a proposal and methodology in detail.

Each student is required to undertake a terminal project in the eighth semester which is to be approved by the Faculty in the seventh semester. This course shall enable the student to identify this individual topic and develop a plan of action for its execution.

Unit 1: Introduction to Research

Students shall be introduced to basics of academic and applied research and different typologies of research methods; Students shall be introduced to various research topics and associated methods as examples.

Unit 2: Formulation of Research Titles (Alternatives)

Students shall develop two alternatives of research titles as their 'terminal project' within their interest areas. Each of these two topics needs to be substantiated with an abstract write-up; These abstracts shall be reviewed by the faculty followed by one-to-one consultation meetings.

Unit 3: Development of Research Proposal

On finalisation of the project topic, each student shall develop detailed background information on that topic and for particular case area(s) based on literature review; This shall establish the need for the project and its scope. The background shall also include basic objectives and limitations of the project.

Unit 4: Development of Detailed Methodology and Field Work Plan

A methodology chart of the intended project with details of the types of information required, the types of survey to be conducted on field shall be presented by the student through visuals / presentation;

The student is expected to conduct the field work for collection of data related to the thesis during the break between seventh and eighth semester, based on the field work plan developed in this course.

Unit 5: Academic Writing

Technical writing – synopsis, abstract, report writing, etc.; Writing styles, citation and referencing.

Suggested Readings:

1) Crotty, Michael, (ed), *Introduction: The Research Process, The Foundations of Social Research, Meaning and Perspective in the Research Process*, Sage Publications, New Delhi.
2) Kothari, C.R. (2004), *Research Methodology: Methods and Techniques*, New Age International, New Delhi.
3) Mahesh Chand, V K Puri (1983), *Regional Planning in India*, Allied Publishers, India.
4) Peter Calthorpe, William Fulton (2001), *The Regional City*, Island Press, USA.

BPLN703	Urban Finance		
Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: This course aimed at imparting technical skill sets on urban finance and knowledge on provisions in the constitution along with non-conventional sources of finances and concepts.

Unit 1: Multiple Finance

Principles and composition of income and expenditure of urban local bodies; Taxation and user charges; Inter–governmental fiscal relations; Powers and resources of local governments, constitutional provisions; CFC and SFC, Index of decentralization; Limitations and need for revenue enhancements; Expenditure control methods and mechanisms; Assistance from foreign donors and Multi National agencies;

Unit 2 Alternative Sources of Financing

Types of partnership approaches; Privatization of civic services; Types of contracts and ownerships; User charged projects; Pricing of services; Market access; Municipal Bonds; Pooled finance and prerequisite conditions for accessing non-traditional funds; Land value capture; Land extractions.

Unit 3: Resources Based on Achievement of Urban Reforms

Role of state government and urban local bodies; City's challenge fund; Urban reforms; Implications on resources, incentive fund and state level pooled finance development fund; Property tax reforms and monetization of public properties.

Unit 4: Institutional Capacity Enhancement

Better finance management, management process; Accounting and budgeting, asset management, receivables management; Computerisation as tool for resource enhancement; Role of Management Information Systems.

Unit 5: Plan Forms and Indices

Financial operating plan, city corporate plan; Development of urban indicators; Infrastructure pricing and financing – financing mechanisms in addition to tax and grants; Private public partnerships like BOT, BOOT, BOLT etc.; Impact fee; Subsidies and Betterment fees.

Suggested Readings:

1) Governament of India (2014), *Policy Discussion Note on Devolving of Land Based Fiscal Tool to the Urban Local Bodies for Strengthening Municipal Finance System*, NIUA, Ministry of Urban Development, New Delhi.
2) Mohanty, Prasanna. K (2014), *Cities and Public Policy: An Urban Agenda for India*, Vol. 1. SAGE Publications India Pvt. Ltd., New Delhi.
3) Governament of India (2010), *Best Practices On Property Tax Reforms In India*, Research Study. Ministry of Urban Development, NIUA, New Delhi.
4) Governament of India (2011), *Estimating the Investment Requirements for Urban Infrastructure Services*, Study Report, NIUA, The High Powered Expert Committee, New Delhi.

BPLN704 Metropolitan Planning

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: This course discusses role of metropolis as a system in regional development. This course also highlights how urban areas are undergoing transformation as a part of changing political economy.

Unit 1: Metropolis and Metropolitanisation

Metropolitan areas as a system and growth engines; complexities in urban system; Case studies from Indian context; Delineation techniques of metropolitan areas,

Unit 2: Metropolises and its Region

City core vs. periphery; Suburbanization; Transit oriented development; Global city and City regions, Urban problems.

Unit 3: Forms and Concepts

Economic Restructuring and the Post-1973 metropolis; New Urbanism and Neoliberalism; Political economies of cities, Urban renewal and segregation.

Unit 4: Emerging Theories

New urban theories; Public Space and urban politics; Social Life in Cities: Gender, Space, and Power.

Unit 5: Programmes Related to Metropolitan Planning

Collaborative governance in cities; Decentralization and Metropolitan Planning Committees, Indian policies and programmes related to metropolitan planning.

Suggested Readings:

1) Harvey, David (1973), *Social Justice and the City*, Johns Hopkins University Press, Baltimore.
2) Kumar, A (2006), *Trends of Planning and Governance in metropolitan India*, ITPI Journal, 3: 2 (2006) 10-20.
3) Government of India (2009), *Guidelines on Urban Infrastructure Development Scheme for Small & Medium towns (UIDSSMT)*, Guidelines, GoI, Ministry of Urban Development ,New Delhi.
4) Sassen, Saskia (2007), *Deciphering the Global: Its Scales, Spaces and Subjects*, Rutledge, New York.

BPLN705 Governance and Management

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: To develop the understanding and application of the concept of governance in development management.

Unit 1: The Concept of Governance

Evolution of the concept of governance; Critical approaches to governance; Governmentality; Types of democracy and significance of decentralisation (political, administrative and fiscal); Good governance.

Unit 2: State, Civil Society and Market: Reforms

New institutionalism and networks in governance; New public management; Transparency and accountability; Access to justice; Civil society; Social movements; State-society synergy; Neo-liberal markets; The concept of participatory governance.

Unit 3: Local Self Government

Models of local government; Challenges of local government institutions in India; The need and empowerment of local governments; Good governance initiatives in local governments; Decentralized planning in India and its various models; Participatory planning; Participatory budgeting;

Unit 4: Governance Innovations

The concept of E-governance, M-governance, SDI-governance and their application in disaster management, public service delivery and efficient local governance.

Unit 5: Urbanization and Multilevel Governance

Multilevel governance: Context, institutional types and critiques; Globalisation and Global Governance; Global civil society and global social movement.

Suggested Readings:

1. Aziz, A. & Arnold, D. (eds.) (1996), *Decentralized Governance in Asian Countries*, Sage, New Delhi.
2. Chhotray, V. and Stoker, G (2009), *Governance Theory and Practice: A Cross-Disciplinary Approach*, Palgrave Macmilla, London.
3. Corbridge, S. (ed) (2005), *Seeing the State: Governance and Governmentality in India*, Cambridge University Press.
4. Hajer, M. & Wagenaar, H (2002), *Deliberative Policy Analysis: Understanding Governance in the Network Society*, Cambridge University Press.

BPLN701 Regional Planning & Development Studio

Number of Credits	15	Subject Category	Studio
Lecture Periods/Week	0	Internal Assessment	250
Practicals /Lab/Workshop Periods/Week	15	External Jury	250
Total Periods/Week	15	Total Marks	500

Objective: Impart techniques, tools and methods and preparation of a development plan for a district or metropolitan area.

Unit 1 and 2: **Part A - Fundamentals of Regional Planning**

Preparation of a regional plan for a district or a region with rural as well as urban settlements shall be the main focus. The first part shall introduce different approaches to regional plan making, role and relevance of regional planning, regional planning in the context of annual and five-year economic planning. District planning in the context of 73rd and 74th constitutional amendment acts.

Unit 3, Unit 4 and Unit 5: **Part B – Regional Planning Project**

The plan making process may include delineation of the region for planning and formulation of regional level goals in accordance with city and rural / village level planning goals and shall be based on different scenarios of projections within different sectors of development. The regional plan should be able to identify growth patterns, thrust areas, and propose investment areas, orders of towns and facilities with respect to physical and human development.

Students shall form smaller groups to analyse and go into the depths of different sectors like - housing, economic base in terms of primary, secondary and tertiary sectors of engagement, proximity and availability of social and physical infrastructure, regional circulation pattern, ecological footprint, etc. There shall be periodic integration and debate exercises for cross-sectoral synergy. Details of one sub-regional plan to be made in terms of special action zones and sectors like tribal, industrial, agro, coastal, eco-sensitive, backward zones, etc.

Suggested Readings:

1. Ghosh, S (1998), *Introduction to Settlement Geography*, Sangam Books Limited, India.
2. Government of India (2015), *Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines*. Vol. 1, Town and Country Planning Organisation, Ministry of Urban Development, New Delhi.
3. Mishra, R. P. (1992), *Regional Planning: Concepts, Techniques, Policies and Case Studies*, Concept Publishing Company, Delhi.
4. Sassen, Saskia (2007), *Deciphering the Global: Its Scales, Spaces and Subjects*, Rutledge, New York.

BPLN711 Environmental Impact Assessment (Elective)

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: familiarize the tools and techniques of EIA

Unit 1: Introduction

Environment-meaning, problems faced in urban and rural context; Need and relevance of Environmental Impact assessment in planning and decision making process; Evolution of EIA at global and national level; Principles of EIA; Classification of EIA projects.

Unit 2: Process and Methods

Process of EIA in India and Abroad; Importance of scoping and screening in EIA process; Role of public participation at various levels of decision making; Methodologies –checklist, matrices, network and social cost-benefit analysis; Advantages and limitations of various method adopted through case studies from India and abroad on projects of various types covering different levels of planning.

Unit 3: Impacts (Understanding and Assessment)

Classification of Impacts-Direct environmental (natural resources) and indirect environmental (social and health) impacts; Urban and regional; Assessment of impacts on resources (including air, water, flora and fauna); Case studies from India and abroad on projects of various types covering different levels of planning.

Unit 4: Various Assessment Techniques

PRA technique, Its definition and concepts, objectives, techniques, advantages and limitation; SEA-evolution need and relevance, scope and tasks.

Unit 5: Strategic Planning Interventions

Need and relevance for strategic planning interventions to reduce environmental impact at various spatial level of planning; Efforts of other policies at global and national level to reduce the Impacts.

Suggested Readings:

1. Government of India (2015), *Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines*. Vol. 1, Town and Country Planning Organisation, Ministry of Urban Development, New Delhi.
2. John Glasson, Riki therivel and Andrew chadwik (2012), *Introduction to Environmental Impact assessment*, Routledge publications.
3. Richard, k. Morgan (2002), *Environmental Impact Assessment, A Methodological Perspective*, Kluver Academic publishers, Boston.
4. Vijay Kulkarni, T V Ramachandra (2006), *Environmental Management*, The Energy and Resources Institute, New Delhi.

BPLN712 Planning for Disaster Management (Elective-I)

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: Explore the fundamental concepts of Disaster Management and their relevance to the planning, development and management of human settlements with a focus on how planning interventions can reduce disaster risk.

Unit 1: Introduction to Disaster Management Framework

Overview of disasters and their impact at global and national level; Definitions of disaster management terminology such as hazard, risk, vulnerability, preparedness, response, mitigation, etc;Overview of types of hazards including natural hazards, environmental hazards and manmadedisasters.

Unit 2: The Disaster Cycle

Pre-disaster – risk and vulnerability; Preparedness, mitigation; Emergency stage, rescue and relief; Emergency shelter; Post disaster, damage and needs assessment; Reconstruction and rehabilitation;Legal and institutional framework for disaster management.

Unit 3: Planning for Disaster Mitigation

The multi-faceted concept of vulnerability, vulnerability and resilience from a planning perspective – land use planning, building regulations,socio-economic considerations for estimating vulnerability; Hazard zonation; Components of disastermitigation – structural mitigation (improvement in design and construction); Non-structural mitigation(land use zoning, development control regulations); Integration of disaster mitigation into planningprocesses – case studies.

Unit 4: Planning for Disaster Response

Institutional framework and roles of different stakeholders- the state and civil society response, private companies and recovery processes; Early warning systems for natural disasters; Evacuation and safe shelters; Maps and databases for effective disaster response; Disastermanagement plans, Hazard risk vulnerability atlas preparation etc., the concepts of disaster capitalism and disaster diplomacy.

Unit 5: Planning for Post-Disaster Reconstruction

Typical issues in a post disaster scenario; Approaches to post disaster reconstruction; Role of planners;Components of reconstruction – housing, physical and social infrastructure, heritage conservation andrestoration, urban renewal, socio-economic rehabilitation; NGOs and CBOs in post-disaster recovery along with case studies of "building back better", displacement and its social and environmental implications – case studies.

Suggested Readings:

1. Government of India (2015), *Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines*. Vol. 1, Town and Country Planning Organisation, Ministry of Urban Development, New Delhi.
2. Kapur, A (2010), *Vulnerable India: A Geographical Study of Disasters*, Sage, New Delhi.
3. Nicolas A. Valcik, Paul E. Tracy (2013), *Case Studies in Disaster Response and Emergency Management*, CRC Press.
4. Rodriguez, Havidan, Quarantelli, Enrico L., Dynes, Russell (2006), *Handbook for Disaster Research*, Springer, India.

Eighth Semester

BPLN802 Rural Planning and Development

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: Import the ways and importance of planning for rural settlements.

Unit 1: Introduction to Rural Development

Hierarchy of rural settlements, meaning, nature and scope of development; Nature of rural society in India. Social Change in India; Sanskritisation, westernisation, modernisation; Diffusion of innovation, resistance to change, socio-cultural, economic and ecological barriers for rural development; Approaches to rural development in India: Broad front approach, sectoral approach, participatory approach, area approach, target group approach and integrated approach to rural development.

Unit 2: Roots of Rural Development in India

Experiments in rural development before Independence: Sriniketan, Martandam,Sevagram, Baroda, Firka development, Nilokheri and Etawa pilot project, rural reconstruction and Sarvodaya programme before independence; Impact of voluntary effort and sarvodaya movement on rural development; Constitutional direction, directive principles; Panchayatiraj, beginning of planning and community development; National extension services.

Unit 3: Post Independence Rural Development

Balwant Rai Mehta committee, three tier system of rural local government; Need and scope forpeople's participation and panchayati raj; Ashok mehta committee, linkage between panchayati raj, participation and rural development.

Unit 4: Rural Development Initiatives in Five Year Plans

Five year plans and rural development; Planning process at national, state, regional and district levels; planning, development, implementing and monitoring organizations and agencies; Special component plan and sub-plan for the weaker section; Data base for local planning; Need for decentralized planning; Sustainable rural development.

Unit 5: Post 73rd Amendment Scenario

73rd Constitution (Amendment) Act–XI schedule, devolution of powers, functions and finance;Panchayati raj institutions–organizational linkages; Recent changes in rural local planning; Gram sabha–revitalized Panchayatiraj; Institutionalization; resource mapping, resource mobilizationincluding social mobilization; Information technology and rural planning; Need for further amendments.

Suggested Readings:

1. Dutt.R, Sundaram.KPM (2008), *Indian Economy*, S Chand Publication, New Delhi.
2. Government of India (2015), *Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines*. Vol. 1, Town and Country Planning Organisation, Ministry of Urban Development, New Delhi.
3. Moseley, Malcolm J (2003), *Rural Development: Principles and Practice*, SAGE Publications Pvt. Ltd., London.
4. Singh.K (2009), *Rural Development Principles, Policies and Management*, SAGE Publications Pvt. Ltd, New Delhi.

BPLN803 Water Sensitive Urban Development

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: The student shall be having a good understanding of urban hydrology and its component. The technologies, strategies, regulations involved in water management will be understood.

Unit 1: Urban Hydrology and Its Component

Hydrological cycle; Various sources of water and its quality, uses of water and its variation, water supply management, sanitation and drainage - social imperatives, environmental considerations and economic challenges.

Unit 2: Waste water

Waste water disposal estimation, collection and disposal, and its subsequent use; storm runoff management, dry weather flow; Technological options for wastewater management, recycling, reuse and treatment.

Unit 3: Water demand and supply management

Water demand management, Strategies for Water pricing, Regulation; Water conservation measures.

Unit 4: Aspects of water sensitive layouts

Neighbourhood design of water sensitive layout, water sensitive street design, water rights and its legal implication.

Unit 5: Development of a term paper

Individuals shall select a particular sector/issue or topic within the fields of water sensitive development in urban context and conduct limited research on the same; Research is to be based on secondary sourced articles and published data.

The outcome shall be a short research paper (about 5-6 pages) or a presentation, which showcases the researcher's viewpoint presented with a scientific argument.

Suggested Readings:

1. Jain, Sharad K., Agarwal, Pushpendra K., Singh, Vijay P. (2007), *Hydrology and Water Resources of India*, Springer, India.
2. John Briscoe, R.P.S. Malik Editors (2007), H*andbook of Water Resources in India: Development, Management and Strategies*, OUP.
3. Ramaswamy, R. Iyer, Editor, (2009), *Water and the Laws in India*, Sage Publications India Pvt. Ltd.
4. Subramanya, K (2000), *Engineering Hydrology,* Tata McGraw-Hill Publishing Co., Ltd., New Delhi.

BPLN804 Climate Change and Cities

Number of Credits	3	Subject Category	Theory
Lecture Periods/Week	3	Internal Assessment	50
Practicals /Lab/Workshop Periods/Week	0	End Evaluation	50
Total Periods/Week	3	Total Marks	100

Objective: Expose the students to various aspects of climate change and its relation to the growth of cities.

Unit 1: Concept and Issues

Changing perspectives in man-environment relationship with focus on issues of population growth and distribution, haphazard urbanization, resource depletion and pollution; Inefficient and intense energy use, life style changes, growing consumption levels and waste; Anthropogenic impacts of growing GHGs on global environment and climate change; Global environmental and climatic change concerns and actions by global community and organizations.

Unit 2: Cities as Cause of Climate Change

Atmospheric heat balance and global warming; Debate on climate change; Energy consumption levels and trends in the cities; Growth of GHGs in the cities of developing countries and India in particular; Rapid urbanization and industrialization; Motorized transportation; Growing builtup area and loss of water bodies and vegetation cover.

Unit 3: Impacts of Climate Change on the Cities

Growing urban vulnerability to climate change and extreme weather events; Heat islands; Heat wave events; Flooding and waterlogging; Sea level rise and coastal cities; Food insecurity; Livelihood issues linked to urban agriculture; Environmental health hazards; Climate change, pollution of water supplies and sanitation and health.

Unit 4: Vulnerability and Resilience of Cities towards Climate Change

Understanding vulnerability, resistance and resilience in climate change science; Locational vulnerability; Poverty and informality; Infrastructure inadequacy; Landuse changes; Assessing the risk of climate change in different sectors; Lack of priority, awareness and sensitivity in city officials and residents.

Unit 5: Response to Climate Change

Mitigation and adaptation to climate change ; Improving the drainage system; Policy intervention to reduce GHGs emissions; Shelter for the vulnerable groups; Flood protection measures; Responsive urban planning measures; Technical measures; Behavioural change; Guidelines on adaptation to climate change; Coastal zone management; Urban design; Critical review of global casestudies on risks, impacts and adaptation.

Suggested Readings:

1. Jane, Bicknell., David, Dodman and David, Satterthwaite (2009), *Adapting Cities to Climate Change*, Earthscan.U.S.
2. Kirstin, Dow and Thomas, E Downing (2007), *The Atlas of Climate Change*, Earthscan. U.S
3. Rosenzweig, C., Solecki, W. D., Hammer, S. A. & Mehrotra, S (2011), *Climate Change and Cities: First Assessment Report of the Urban Climate Change Research Network (1st ed.)*, Cambridge University Press.
4. UN HABITAT (2009), *Climate Change: Are Cities Really to Blame ?*, Urban World , Volume 1, Issue 2, UN.

BPLN801 Dissertation

Number of Credits	21	Subject Category	Studio
Lecture Periods/Week	0	Internal Assessment	350
Practicals /Lab/Workshop Periods/Week	21	External Jury	350
Total Periods/Week	21	Total Marks	700

Objective: To conduct independent scientific research in the form of a terminal project on a topic decided in the last semester.

Each student is required to undertake a terminal project on a subject concerning urban, rural, or regional development as approved by the Department in the seventh semester in the course Dissertation.

The terminal project will provide an opportunity to the student to synthesise the knowledge and skills acquired through the learning of various theories and practices during the course and apply it for strategy formulation for a live planning challenge.

The terminal project shall be monitored continuously and periodically, through internal marked reviews, to check the consistency of work, the relevance of the analysis with respect to the data collected and project scope, and the progress towards logical proposals. The final output shall be firstly in the form of an extended abstract, which once approved by the department will be followed by the submission of a detailed report and drawing/visuals for external jury members, in a given format. The terminal project shall also be presented orally in external jury by each student in the form of visuals / drawings as necessary for each topic.

Suggested Readings:

1. Elizabeth A. Wentz (2013), *How to Design, Write, and Present a Successful Dissertation Proposal*, Sage Publications.
2. Greetham, Bryan (2014), *How to Write Your Undergraduate Dissertation*, Palgrave Macmillan.
3. Kothari, C.R. (2004), *Research Methodology: Methods and Techniques*, New Age International (P) Limited Publishers, New Delhi.
4. Tayie, Sami (2005), *Research Methods and Writing Research Proposals*, Pathways to Higher Education, Cairo.