Master of Planning

Syllabus - First Semester

PLANNING TECHNIQUES

Course Code: PLN4103 **Credit Units: 3**

Lecture Hours Per Week	(L) 2+ (D) 1*****
End Semester Examination	50
Internal Assessment	50
Total Marks	100

Module 1: Survey Techniques and Mapping
Data base for physical surveys including land use, building use, density, building age, etc., and socio-economic surveys; Survey techniques; Land use classification or coding and expected outputs; Techniques of preparing base maps including understanding the concepts of scales, components and detailing for various levels of plans like regional plan, city plan, zoning plan, and local area plan.

Module 2: Analytical Methods
Classification of regions, delineation techniques of various types of regions, analysis of structure of nodes, hierarchy, nesting and rank size; Scalogram, sociogram, etc.; Planning balance sheet; Threshold analysis; Input output analysis, SWOT analysis;

Module 3: Demographic Methods
Methods of population forecasts and projections; Lorenz Curve, Ginni Ratio, Theil's index, rations: urban – rural, urban concentration, metropolitan concentration; Location dimensions of population groups – social area and strategic choice approach – inter connected decision area analysis.

Module 4: Planning Standards
Spatial standards, performance standards and benchmarks, and variable standards; UDPFI guidelines, zoning regulations and development control rules and regulations

GIS STUDIO COURSE/FIELD PRACTICE

Course Code: PLN4106 **Credit Units: 3**

Lecture Hours Per Week	(L) 3+ (D) 0*****
End Semester Examination	--
Internal Assessment	100
Total Marks	100

The studio program is divided into two parts. The first part involves learning of basic techniques such as GIS applications, remote sensing and statistical applications. The second part contains a number of plan preparation assignments.

Module 1: GIS Applications
Coordinate system and geo-coding, vector data structure and algorithms, raster data structure and algorithms, data bases for GIS – concepts, error modeling and data uncertainty, decision making through GIS, constructing spatial data infrastructure and spatial information system; National Urban Information system.

Module 2: Remote Sensing
Why remote sensing, aerial and satellite remote sensing, principles of aerial remote sensing, Aerial photo-interpretation, photogrammetric, stereovision, measurement of heights / depths by relief displacement and parallax displacement. Principles of satellite remote sensing, spatial, spectral, temporal resolutions. Applications in planning, population estimation, identification of squatter / unauthorized areas, sources of pollution, etc., spatial resolution related to level of Planning

Module 3: Demography
Sources of demographic data in India, Settlement type, growth pattern and structure: urban settlement analysis, Concentration: spatial, vertical and size, peri-urban sprawl, economic base; Rural Settlements – Size, occurrence and character, transformation, Policies towards various size class settlements.
Population structure and composition – Age, sex, gender, marital status, caste, religion, literacy level, etc.; Age - sex ratio, structure, pyramid; dependency ratio; occupational structure; Fertility; mortality, migration analysis, natural growth of population, migration and its iPLNications in spatial planning;

Module 4: Statistical Applications
General concepts - statistical interference, population and saPLNes variables, SaPLNing, siPLNe statistical models, Measures of central Tendency, Measures of Dispersion, Measures of shape of distribution, Correlation and regression

STUDIO ASSIGNMENTS

Course Code: PLN4108 **Credit Units: 6**

Lecture Hours Per Week	(L) 0+ (D) 12*****
End Semester Examination	150
Internal Assessment	250
Total Marks	400

First Assignment
Film Appreciation (individual assignment)
Films related to city development and socio-economic issues will be screened for students. The purpose of these films is to educate the students' understanding of various development issues and to absorb them in the planning practice. At the end of the film, a discourse around the film will also be held.
After viewing the films, each student is expected to write about its main focus, city / region context, its applicability to Indian environment by answering the given questions in not more than half a page.

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

Third Assignment
Area Appreciation (individual assignment)
The aim of the area appreciation exercise is to enable the students to understand and contextualize the location of the area in relation to the city, zone and area in which the particular place is situated. This is done in relation to the socio-economic, spatial and cultural characteristics of that city, zone, location, etc. The main purpose is to make the students appreciate the location attributes of land parcels for future development in a city.
Due to the size of the area, this exercise is done in groups of students being assigned to a particular area.

The following planning issues at area level should be identified:

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

- Land use including Agriculture land and land use conflicts, extent (%) of broad land use such as commercial, industrial, residential, institutional and recreational.
- Extent of formal / informal activities present in the area including their location and conflicts.
- General land tenure of the area and land value for different uses.
- Major types of transport, type of roads, hierarchy of roads, type of transport modes used.

- Amenities: Location of Social and Physical infrastructure and their problems as perceived by local population. Look for specific infrastructure such as Water supply, drainage (water logging areas), waste collection and disposal system, sanitation, etc.
- Environmental Issues: Open Spaces – Availability and extent of open space to built-up area, garbage disposal, encroachment (through photographic evidences and sketches).
- Locating the study area in the zone, city and regional context with respect to all the above aspects.

Fourth Assignment
Site planning (individual assignment)
Site planning is a process whereby the optimum utilization of potential of site is considered recognizing the constraints the site has. It uses 3 dimensional space of the site and the associated location advantages, human activities and the regulations that are assigned to a particular site.
The site is developed using a set of standards / norms in a given context which varies from location to location. A student is expected to understand the intricacies and interface between various variables such as soil conditions, topography, environmental dimensions, location, spatial standards applicable to the site, etc.

Fifth Assignment
City Development Plan (Group assignment)
A City is a multi-dimensional, dynamic and a futuristic space. Understanding city involves appreciating this multi direction, and include them in the city making process. A job of physical planner does not merely understand the current conflict in development but to emerge out of this and to come out with a vision for the city. To arrive at this vision, a planner needs to understand the dynamics of various components of the city and how and what level interventions can be made to achieve that vision.
A group of students are expected to study a city in terms its present problems and issues and project a futuristic vision in terms of scenario building.

SEMINAR- I

Course Code: PLN4107 **Credit Units: 1**

Lecture Hours Per Week	(L) 2+ (D) 0
End Semester Examination	0
Internal Assessment	100
Total Marks	100

The Seminar will provide a platform for students of planning to get interactive and put forward their point of views by involving themselves into Group Discussions and Presentation related to Physical planning, Planning issues, Planning policies, Planning interventions and Case Studies etc.

The students may choose topics related to Studio Projects, Planning issues, Role of stakeholders in planning process, SWOT analysis, Efficiency and Deficiency in the planning process, Development Plans, Public Interest, Displacement, Specific case study etc.

Syllabus – Second Semester

STUDIO

Course Code: PLN4206 **Credit Units: 9**

Lecture Hours Per Week	(L) 3+ (D) 12*****
End Semester Examination	200
Internal Assessment	300
Total Marks	500

(a) **Application of GIS and SDI in Planning**

Lecture Hours Per Week	(L) 3+ (D) 0*****
Credits	2
End Semester Examination	50
Internal Assessment	50
Total Marks	100

In this module, the students will be trained in the aspects of GIS and SDI that includes digitization, 3D modeling, overlays, interface with statistical packages into GIS and how to use them. This will be applied to the studio project and the students will be required to do all their analyses at various levels based on the data collected from the field.

(b) Block or Taluka Planning

Lecture Hours Per Week	(L) 0+ (D) 12*****
Credits	8
End Semester Examination	150
Internal Assessment	250
Total Marks	400

Block or Taluka Planning has been practiced in India since Independence. After the 73rd and 74th CAA, the emphasis has been placed on district planning which in turn has given scope to do Block or Taluka planning so as to achieve inclusive development. Not many village level officials know about the process of block level plan making except in some states. The students are required to prepare a detailed Block or Taluka Plan for a selected block(s) in a district and come out with a detailed analysis, proposals for development and written report.

SEMINAR- II

Course Code: PLN4207 **Credit Units: 1**

Lecture Hours Per Week	(L) 2+ (D) 0
End Semester Examination	0
Internal Assessment	100
Total Marks	100

The Seminar will provide a platform for students of planning to get interactive and put forward their point of views by involving themselves into Group Discussions and Presentation related to Physical planning, Planning issues, Planning policies, Planning interventions and Case Studies etc.

The students may choose topics such as Case study of Live planning projects, Modern planning techniques, Development Plans, Public Interest, Environmental Planning, Transport and Infrastructure Planning, GDP, EIA, HDI, TOD, Displacement, Specific case study etc.

Syllabus – Third Semester

Course Code: PLN4302	**Credit Units: 3**
Lecture Hours Per Week	(L) 2+ (D) 1*****
End Semester Examination	50
Internal Assessment	50
Total Marks	100

Module 1: **Introduction to Project Planning and Policy Parameters**

Introduction to Project, nature of planning projects – Project Life Cycle: Identification, issues involved in identification including source of projects, Formulation: links between projects and local, district, state and national level planning including sectoral policies; pre-feasibility studies; feasibility studies; Concept of Appraisal: Definition, need and aspects; Appraisal Methods: UNIDO, Little-Mirrlees, ZOPP, GOPP, etc.; Finance, cost recovery, standards, operational maintenance, institutional arrangement, design viability, density and cost, public participation, etc., and how these affect a project. Planning projects: Scale, cost, space and time variations; Demand Analysis and forecasting; market analysis; with and without project scenario analysis.

Module 2: Technical, Financial and Economic Appraisal

Magnitude of the project, processes, materials, equipment, reliability of the system to be used, suitability of the plan, layout and design, location of the project, necessary infrastructure, factors of production, methods of iPLNementation, procurement, phasing and iPLNementation schedule; Project profitability at market price; techniques of financial appraisal (methods not based on time value of money and use of time value of money in appraisal); financial effects on the intended beneficiaries, financial risk and sensitivity to price changes, adequacy, autonomy and financial standards and overall financial viability of project through Internal Rate of Return (IRR) and sensitivity analysis; Efficiency pricing: a) Market distortions- shadow pricing: labor, foreign exchange, land and capital; b) Income distribution effect; c) consumption, savings and investment adjustments, d)adjustments for poverty, e)adjustment for merit and demerit goods; calculation of Economic Rate of Return (ERR)

Module 3: **Risk and Uncertainty**

Types of Risk: Systematic and unsystematic, integrating risks in project NPV criterion. Methods: Conservative estimates, project classification, shorter pay back period, certainty equivalent approach, Risk adjusted return, Capital Asset Pricing Model (CAPM), Monte Carlo Simulation, Decision Tree Analysis, Cost and Time over runs in project.

Module 4: Social, Commercial, Environmental and Institutional Appraisal and Evaluation

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

RESETTLEMENT AND REHABILITATION

Course Code: PLN4305 **Credit Units: 3**

Lecture Hours Per Week	(L) 2+ (D) 1*****
End Semester Examination	50
Internal Assessment	50
Total Marks	100

Module 1: **Land Development and Resultant Resettlement**
Land Acquisition Models and Practices in India and elsewhere for projects. Compulsory Acquisition, land sharing and adjustment models, land pooling, negotiated land acquisition. Development induced relocation – voluntary and involuntary resettlement; Resettlement and Rehabilitation Policies. Policies of multi-lateral / bilateral funding institutions: World Bank, Asian Development Bank Policies, National Policy on Resettlement and Rehabilitation and State Policies on R and R and Sector Specific Policies in large projects such as Multi-Purpose Dam Projects, Mining projects, Highway projects, SEZ, etc.

Module 2: Impact of Resettlement and Rehabilitation (R and R) Plan
Poverty and Social Impact Assessment for Development projects: Linear Projects (Roads, railways, etc), vis-à-vis non-linear projects (Township / industrial area development, dams, forests). Impact on vulnerable and indigenous groups: Project Affected People and Project Affected Assets, Impact on Women and Children, Gender Action Plans. Resettlement Plan: Context, content, structure, principles and practices: Economic, social and physical iPLNications of resettlement and rehabilitation. Resettlement options and strategies, Self-relocation and project facilitated relocation; Case studies in Resettlement and Rehabilitation in Development Sectors: Mining, Highways, Power, industrial and township development. Flood affected areas and other infrastructure projects such as Mumbai Transport Project.

Module 3: Rehabilitation
Rehabilitation: Policies, Assessing the livelihood looses, livelihood impact assessment and skill mapping surveys, income restoration strategies, training strategy for skill up gradation and meeting demands for shifting economic profiles in the development area.

Module 4: Participation as an Important Tool for Resettlement and Rehabilitation
Use of Participatory tools for Resettlement Planning. Institutional arrangements for R and R – Role of NGOs / CBOs and other local, state, national and international organizations in resettlement and rehabilitation, Monitoring and Evaluation of R and R interventions.

STUDIO

Course Code: PLN4307 **Credit Units: 9**

Lecture Hours Per Week	(L) 3+ (D) 12*****
End Semester Examination	200
Internal Assessment	300
Total Marks	500

(a) SPATIAL DATA INFRASTRUCTURE

Lecture Hours Per Week	(L) 3+ (D) 0*****
Credits	3
End Semester Examination	50
Internal Assessment	50
Total Marks	100

Module 1: Concepts and Hierarchy
Spatial Data Infrastructure: Concepts, Contents, Nature and SDI hierarchy; Global, National, Regional and Local SDI initiatives. Building a SDI and using it in planning and decision making process. Open Geospatial Consortium – ISO standards (TC211). Data streaming and mining in spatial data infrastructure.

Module 2: From Global to Local SDI applications
National SDI Initiatives: NRDMS: Multi-level spatial data infrastructure, NSDI: Assimilation and Dissemination and Data warehouse; State SDI: NCT Delhi SDI, Karnataka and Kerala Portals; Case studies from various levels. Karnataka's Land Management Programme: Bhoomi, geo portal assisting local to state level planning process; Gujarat's Tax programme, etc.; Application to coastal area planning – Tamil Nadu coast.

Module 3: SDI application in Planning and Decision Support
SDI – Location based technology development, Interoperability arrangement for geospatial data and ontology mapping; Application in Population Data Sets, Natural Resource Repository, Integrated Water Resource Management, mKrishi – application in agriculture and rural development, geospatial application in transportation, disaster management and conservation. Spatio-temporal data modeling and analysis; 3 - D mapping of land and its use in city and regional planning; Geo visualization of landscapes: rural and urban.

Module 4: Technology in SDI and decision support system
Real time technologies and their application: landslides monitoring in Himalayan region, web based spatio-temporal prediction of landslides, decentralization planning in Uttarakhand- web based model. Satellite based and other real time technologies and their use in identifying physical transformation. Its application in urban and rural areas: slum formation, illegal colonies, flash flood warning system in river and coastal belt, etc.

(b) DISTRICT PLANNING/REGIONAL PLANNING

Lecture Hours Per Week	(L) 0+ (D) 12*****
Credits	12
End Semester Examination	150
Internal Assessment	250
Total Marks	400

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

SEMINAR- III

Course Code: PLN4306 **Credit Units: 1**

Lecture Hours Per Week	(L) 1+ (D) 0
End Semester Examination	0
Internal Assessment	100
Total Marks	100

The Seminar will provide a platform for students of planning to get interactive and put forward their point of views by involving themselves into Group Discussions and Presentation related to Physical planning, Planning issues, Planning policies, Planning interventions and Case Studies etc.

The students may choose topics such as ongoing interventions in planning at global level, critical appraisal of planning policies and live case studies and Modern planning techniques, Economic and Management issues in planning, development and displacement, Regional planning borderless citiea and states etc.

Syllabus – Fourth Semester

PROJECT (THESIS)

Course Code: PLN4437 **Credit Units: 24**

Lecture Hours Per Week	(L) 0+ (D) 24*****
End Semester Examination	400
Internal Assessment	600
Total Marks	1000

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

*** L stands for Lectures and D stands for Drawing Classes or Studio.**