

Master of Planning (Urban and Regional Planning)

Course Structure and Detailed Syllabus for
Two Year Masters Degree Programme in Planning

Effective from the Academic Year 2024-25 onwards

(As Approved by the Senate in its 17th Meeting held on 27.05.2024)



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Introduction to Master of Planning (Urban and Regional Planning)

Master of Planning (Urban & Regional Planning), abbreviated as M. Plan (URP), is a two-year full-time PG programme in Planning offered by the School of Planning and Architecture, Vijayawada specialising in Urban & Regional Planning.

The key objective of the course is to equip students with the skills required to comprehend urban and regional issues and to analyze the physical, socio-economic, cultural, political, and ecological dimensions of human settlements. The course is designed to provide necessary exposure to various planning processes, emerging trends, and advanced technical know-how. It aims to contribute towards the creation of professionals in the field and to cater to the specific needs of the industry and academia. During the course, students will be provided with ample opportunities to interact with subject experts, relevant organizations, etc. The course enables students to gain real-time experience through their involvement in ongoing or live projects.

The M. Plan (URP) is a two-year program spread across four semesters. The course structure and syllabus are designed with coherence and reference to the Model Curriculum for Master of Planning by the All India Council for Technical Education (AICTE) 2020 and Model Curriculum for Master of Planning by ITPI, Orienting Planning Education in Line with NEP 2020. The curriculum integrates a variety of subjects, including studios, labs, theory, and field visits. The syllabus integrates a range of courses to provide a comprehensive education in urban and regional planning. Planning Studio courses engage students to participate and learn from the filed based projects through experiential work, the professional and foundation courses aim at basic and comprehensive knowledge and coherent understanding of the subjects. The Interdisciplinary courses allows the students to develop the professional capabilities in a range of disciplines. The lab-based courses emphasizes on digital skills prepares students for the tech-driven industry. Analytical skill development is also prioritized in few core subjects, equipping students to assess complex data and make informed decisions. This multifaceted approach aims to produce skilled professional's adept at addressing diverse planning challenges

The broad course structure of the programme is as follows:

The **first semester** is an integrated semester common to all master courses of planning offered by the school. The studio focuses on area planning. Subjects offered are introduction to planning theories and concepts, data analytics and techniques in planning, habitat and environmental planning, infrastructure planning, and socio-economic dimensions in planning.

The **second semester** focuses on urban planning, emphasizing practical and theoretical aspects. The main studio is dedicated to the preparation of development plans and city master plans, providing hands-on experience. Subjects offered are geomatics and analytics in planning, city and metropolitan planning, land economics and management, advanced infrastructure planning, and planning legislation and governance. The semester also offers elective subjects such as inclusive planning, social impact assessment and rehabilitation planning, smart cities, urban renewal, and conservation. Additionally, non-graded audit courses designed such as yoga, dance, music and NSS to enhance the physical well-being of the students are also offered

The **third semester** focuses on regional planning. Subjects offered in this semester are research methods, rural planning and development, project planning and management, and disaster preparedness and management. Elective subjects such as human settlements and climate change, special area planning, future settlements, tourism planning, and advanced quantitative methods are offered. Additionally, non-graded audit courses designed to enhance physical well-being are available.

Course Structure

FIRST SEMESTER (INTEGRATED)

S. No.	Subject Code	Subject Title	Distribution of Periods Per Week			Total Periods Per Week	Credits	Subject Category
			L	T	S/P			
1	MPIS111	Area Planning Studio	3	0	12	15	15	SC
2	MPIS112	Planning Theories and Concepts	2	1	0	3	3	TC
3	MPIS113	Data Analytics and Techniques in Planning	2	1	0	3	3	TC
4	MPIS114	Habitat and Environment Planning	2	1	0	3	3	TC
5	MPIS115	Infrastructure Planning	2	1	0	3	3	TC
6	MPIS116	Socio-Economic Dimensions in Planning	2	1	0	3	3	TC
TOTAL			13	5	12	30	30	

SECOND SEMESTER

S. No.	Subject Code	Subject Title	Distribution of Periods Per Week			Total Periods Per Week	Credits	Subject Category
			L	T	S/P			
1	MURP121	Urban Planning Studio	3	0	12	15	15	SC
2	MURP122	Geomatics and Analytics in Planning	1	1	1	3	3	JC
3	MURP123	City and Metropolitan Planning	2	1	0	3	3	TC
4	MURP124	Land Economics and Management	2	1	0	3	3	TC
5	MURP125	Planning Legislation and Governance	2	1	0	3	3	TC
Elective 1: ANY ONE								
6	MURP1210	Inclusive Planning	2	1	0	3	3	OE
7	MURP1211	Social Impact Assessment and Rehabilitation Planning	2	1	0	3	3	PE
8	MURP1212	Smart Cities	2	1	0	3	3	OE
9	MURP1213	Urban Renewal and Heritage Conservation	2	1	0	3	3	PE
10	MURP1214	Systems Thinking and System Dynamics	2	1	0	3	3	OE
12	MURP1215/ MTP 124	Urban Transport Planning	2	1	0	3	3	OE
13	MUPR1216	From Other Masters Programme (Same Semester) / online platform duly approved the department	2	1	0	3	3	OE
ECOC Audit Courses: ANY ONE								
11	ECOC1	To be Chosen						A
12	ECOC2	To be Chosen						A
PBOC Audit Courses: ANY ONE								
13	PBOC1	To be Chosen						A
14	PBOC2	To be Chosen						A
TOTAL			12	5	12	30	30	

Note1: Compulsory Summer Professional training / internship (of six weeks) after second semester is to be undertaken by each student. The compulsory training shall be deemed as completed only when the Department of Planning examines the work of each student in the subsequent third semester and declares it to be "Satisfactorily Completed".

In the **fourth semester**, students would be required to undertake thesis. In addition, two theory subjects are offered. These include development finance, and professional practice in planning.

There are fifteen electives (including professional electives) and eight audit courses offered in the second and third semesters in total in MURP. Each subject is divided into five sections consisting of the subject details, objective, units and suggested readings. The subject syllabus is broken into progressive sections through the units, to be taught over the semester. However, it may be noted that the syllabus covered is not exhaustive and the individual subject teacher may augment the syllabus as per his/her perception of the subject with prior concurrence of the Head of the Department.

The five underlying principles of 'Sustainability, Equity, Efficiency, Harmony, and Safety' are to be emphasized as a cross-cutting theme in executing planning lab/studio exercises and application of theory subjects. The syllabus also introduces concepts of Indigenous Knowledge Systems (IKS) in Environmental Planning and Management. The syllabus is designed so as to develop strong communication, interpersonal, advocacy and analytical skills of the student. The course endeavours to give real time experience to students through their involvement in the ongoing or live projects. The programme is designed to enable the growth of the students into professionals in the field, who are not only environmentally sensitive in their planning approaches but are versed with the know-how of the state-of-the-art techniques in the industry.

THIRD SEMESTER

S. No.	Subject Code	Subject Title	Distribution of Periods Per Week			Total Periods Per Week	Credits	Subject Category
			L	T	S/P			
1	MURP211	Regional Planning Studio	3	0	12	15	15	SC
2	MPIS212	Research Methods	2	1	0	3	3	JC
3	MURP213	Rural Planning and Development	2	1	0	3	3	TC
4	MURP214	Project Planning and Management	2	1	0	3	3	TC
5	MURP215	Disaster Preparedness and Management	2	1	0	3	3	TC
Elective 2: ANY ONE								
6	MURP2110	Human Settlements and Climate Change	2	1	0	3	3	OE
7	MURP2111	Special Area Planning	2	1	0	3	3	PE
8	MURP2112	Future Settlements	2	1	0	3	3	OE
9	MURP2113	Tourism Planning and Development	2	1	0	3	3	OE
10	MURP2114	Planning and Politics	2	1	0	3	3	PE
11	MURP2115	Advanced Quantitative Methods for Planning	2	1	0	3	3	OE
12	MURP2116	Principles of Sustainable Development	2	1	0	3	3	OE
13	MURP2117	Globalization & Social Equity	2	1	0	3	3	PE
14	MURP2118	Indian Knowledge Systems	2	1	0	3	3	OE
15	MURP2119	From Other Masters Programme (Same Semester) / online platform duly approved the department	2	1	0	3	3	OE
ECOC Audit Courses: ANY ONE								
16	ECOC1	To be Chosen						A
17	ECOC2	To be Chosen						A
PBOC Audit Courses: ANY ONE								
18	PBOC1	To be Chosen						A
19	PBOC2	To be Chosen						A
TOTAL			13	5	12	30	30	

FOURTH SEMESTER

S. No.	Subject Code	Subject Title	Distribution of Periods Per Week			Total Periods Per Week	Credits	Subject Category
			L	T	S/P			
1	MURP221	Planning Thesis	2	0	22	24	24	SC
2	MURP222	Development Finance	2	1	0	3	3	TC
3	MURP223	Professional Practice in Planning	2	1	0	3	3	TC

Note 2: Credits for each subject are the same as the number of lecture / practical hours per week, whichever is higher.

Subject Code Nomenclature:

MPIS111 is to be read as:

<u>MPIS</u> = Masters in Planning (Integrated Sem);	<u>1</u> (1 st digit) = 1 st Year;
<u>1</u> (2 nd digit) = 1 st Sem of 1 st Year;	<u>1</u> (3 rd digit) = 1 st Subject.

MURP211 is to be read as:

<u>MURP</u> = Masters in Urban and Regional Planning;	<u>2</u> (1 st digit) = 2 nd Year;
<u>1</u> (2 nd digit) = 1 st Sem of 2 nd Year;	<u>1</u> (3 rd digit) = 1 st Subject.

MURP2110 is to be read as:

<u>MEPM</u> = Masters in Urban and Regional Planning;;	<u>2</u> (1 st digit) = 2 nd Year;
<u>1</u> (2 nd digit) = 1 st Sem of 2 nd Year;	<u>10</u> (3&4 th digit) = 1 st Elective Subject.

Subject Category Nomenclature:

SC = Studio Core Subject	TC = Theory Core Subject	JC = Jury Core Subject
PE = Professional Electives	A = Audit Subjects	OE = Electives from Other Masters Programme (Same Semester), online platform duly approved by the department

SC (Studio Core Subject): These subjects are the practical backbone of the curriculum, focusing on hands-on projects and real-world applications, essential for mastering planning skills.

TC (Theory Core Subject): These subjects provide the theoretical foundation, covering key concepts, methodologies, and frameworks necessary for understanding urban and regional planning.

JC (Jury Core Subject): These subjects involve assessments and presentations, where students present their projects and designs before external experts at the end of the semester, fostering evaluation and feedback.

PE (Professional Electives): These subjects focus on advanced professional skills and knowledge, preparing students for specific career paths within the planning industry.

OE (Electives from Other Masters Programme - Same Semester): These subjects provide an interdisciplinary approach by allowing students to take courses from other master's programs, broadening their academic perspective.

ECOC and PBOC are the open electives that are non-graded courses.

Detailed Syllabus

Master of Planning (Urban and Regional Planning)



First Year – First Semester – Integrated Semester

MPIS111- Area Planning Studio	Subject Category	SC
	Number of Credits	15
	Lecture Periods per Week	3
	Tutorial Periods per Week	-
	Studio/Lab/Workshop/Practicals	12
	Total Periods per Week	15

Objective:

- To enable the students to understand the socio-economic and spatio-cultural, environmental characteristics along with the land-use dynamics of the study area.
- To plan for rational physical and socio-economic interventions for sustainable and harmonious development of the future.

Part A: Literature and Documentary Review on the selected themes **15**

Area Appreciation at the Neighbourhood level **30**

Understanding the linkages between different aspects of socio-economic life in relation to the land-use in the cities. Preparation of area profiles in the city, such as residential, commercial, recreational, industrial, slum area and institutional area. Studying impact of land use, economic and socio-cultural activities on the physical environment of the area.

Part B: Village Planning **60**

Preparation of plans for the identified village/s by studying the physical, socio-cultural, economic, environmental and governance aspects. Understanding how development impacts villages and the communities. Appreciating the need for balancing development with sustaining the livelihoods of rural communities and drawing plans for suggested interventions for the community. Community Engagement and Integrating Indian Knowledge System (One week field visit including community engagement)

Part C: Local Area Planning/ Area Development Planning **120**

Preparation of neighbourhood plan considering different user groups. This may involve the preparation of local area plans/ area development plans/ residential / site plans (low and high density) preferably for areas where new developments are coming up.

Students need to understand the need for a balanced development with incorporation of elements like sustainability, livelihood, environmental protection, inclusive growth and institutional engagement. In addition, emphasis will be given on planning terminologies, strengthening the planning vocabulary and technical communication skills.

Total: 225 Periods

Outcomes:

- Basic knowledge and skillset to prepare the grassroot level plans
- Capability to prepare local area/ sub-city level plans by integrating the sectoral needs
- Students' skills in area appreciation, mapping and site planning techniques

References:

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. Manitoba Intergovernmental Affairs and City of Winnipeg's Planning, Property and Development Department – Planning and Land Use Division (2002), A Guide for Developing Neighbourhood Plan.
3. Thomas Russ. R(2009), Site Planning and Design Handbook. Mcgraw Hill Publications.
4. Singh. K (2009), Rural Development Principles, Policies and Management. Sage Publications, Pvt. Ltd, New Delhi.
5. Gram Panchayat Spatial Development Plans as developed under the guidelines of MoPR, Gol

MPIS112 - Planning Theories and Concepts	Subject Category	TC
	Number of Credits	3
	Lecture Periods per Week	2
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practicals	-
	Total Periods per Week	3

Objectives:

- To equip the students with the required knowledge of conventional and contemporary planning thought, pluralistic nature of values in the profession, planning approaches and models. Focus would be on integrating procedural and substantive elements of planning theory to current and future planning practices

Unit I Planning Concepts

9

Settlement systems, Classification of settlements, primate city, central place concept, concepts of complementary area, central goods and services, range, threshold etc; city-region relationship; structure of city regions, area of influence, dominance; rural-urban fringes; push and pull factors; migration; need for planning; Scalar arrangements in Planning (regional, mega, metro regions, city and local area plans).

Unit II Rational Planning Approaches and Models

9

Systems approach to planning; Comprehensive development plan; Pluralism in planning; Strategic planning; Structure plans; Incremental planning; Equity based planning; Inclusive planning; Participatory planning – Collaborative and communicative planning; Introduction to Political economy model, New economic geography models & globalisation models.

Unit III Techniques of Plan Preparation

9

Surveys, Techniques of conducting surveys for land use, building use, density, structural condition of buildings, heights of building, land utilization and physical features of land; Techniques of mapping – methodologies, physical surveys, land use classification, base map preparation for various levels of plans; Choice of appropriate scales for various types of plans; Data requirement for various types of plans; Planning standards and regulations – Spatial standards, performance standards and standards for utilities, URDPFI guidelines, development control regulations.

Unit IV Methods and Tools

9

Analytical methods - linear programming, threshold analysis, simulation, rank size rule, scalogram, sociogram, cluster and factor analysis, delineation techniques, SWOT analysis; location models, gravity models.

Unit V Emerging and Future Trends

9

Emerging school of thoughts and doctrines; Recent and contemporary contributions to the changing planning paradigms; Planning for future and in future - vision development, strategising, Implementation of planning policies and development plans.

Total: 45 Periods

Outcomes:

- Application of relevant planning theories and concepts in urban and regional planning

References:

1. C S Bertuglia, G. Leonardi, (eds) (2018). Urban Systems: Contemporary Approaches to Modelling. Routledge, London.

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2. Richard E. Klosterman, Kerry Brooks, Joshua Drucker, Edward Feser, Henry Renski (2018). Planning Support Methods: Urban and Regional Analysis and Projection. Rowman & Littlefield Publishers.
3. Wang, Xinhao & Hofe, Rainer (2007). Research Methods in Urban and Regional Planning. Springer-Verlag Berlin Heidelberg. Tsinghua University Press.
4. Philip Allmendinger (2017). Planning Theory. Macmillan Education Publications.

MPIS113 - Data Analytics and Techniques in Planning	Subject Category	TC
	Number of Credits	3
	Lecture Periods per Week	2
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practicals	-
	Total Periods per Week	3

Objectives:

- To acquire proficiency in quantitative techniques and computing tools that are applicable in planning domain to conduct empirical studies.

Unit I Data sources and surveys in Planning 9

Types of data, data aggregation, units of measurement, standard notation; coding and decoding methods, tabulation and graphical presentation of data; Introducing web-based information portals and datasets as raw information sources; Elementary association models and decision making; Index Numbers (weighted and unweighted); Application of index number in spatial planning; Calculation techniques of vital events; Quantitative and qualitative data collection methods; Validity and reliability of data; Questionnaire design and typology; measurement scales and their applications; Sampling techniques, sample size calculations.

Unit II Introduction to Statistical Methods for Planning 9

Descriptive statistics (Frequency distribution; Measures of central tendency; Measures of dispersion); Introduction to probability; normal and standard normal distribution; Tests of hypothesis- type I & II errors, one-tailed and two tailed tests, chi-square test, student T test.

Unit III Correlation and Regression 9

Correlation – scatter plot diagrams, correlation coefficients; Least square method; Assumptions of regression analysis, linear regression, multiple regressions; Dummy variables; Functional forms; Binary dependent variables; Instrument variables; Time series analysis;

Unit IV Spatial Data and Geographic Information Systems 9

Definitions – Geoinformatics, Remote Sensing, Geographic Information Systems (GIS), the concept of earth surface projections; the need for GIS, Spatial Data Infrastructure; accuracy and precision, raster and vector data, spatial thematic models, Components of a GIS; spatial and attribute data- input and output; spatial data entry- data structure for GIS, vector data structures; Coordinate systems; Geodetic data - point positioning, problems, measurements, spatial analysis using lab modules, etc.

Unit V Planning Techniques 9

Maps as a representation of reality, Elements of Maps; Graphical, linear and areal scales, Notations involving basic discipline of maps; Measurement of areas; Data creation and query; Map preparation – Geo-referencing, digitization, scales, layers, layout, topology creation, spatial data analysis - buffer, overlay and multi criteria decision modelling, Hotspot analysis.

Note: Examples from spatial planning to be applied in each unit using softwares like QGIS, ArcGIS, Geoda, Spreadsheets, SPSS, etc.

Total: 45 Periods

Outcomes:

- Proficiency in using statistical and planning techniques in urban and regional planning

References:

1. Agarwal B L (2007), Programmed Statistics. New Age International Publishers, New Delhi.
2. Alan C. Acock (2012), A Gentle Introduction to STATA. Revised Third Edition.
3. Gupta and Gupta (2012), Business Statistics. Sultan Chand and Sons, Delhi.
4. Wooldridge (2011), Introductory Econometrics: A Modern Approach. Thomson Press, Noida.
5. Gujarati, D.N. and Porter, D.C., 2009. *Basic econometrics*. McGraw-hill.
6. Sachithanandan (2004), Reading material on Planning Techniques, Institute of Town Planners India, New Delhi.



MPIS114 - Habitat and Environmental Planning	Subject Category	TC
	Number of Credits	3
	Lecture Periods per Week	2
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practicals	-
	Total Periods per Week	3

Objectives:

- To give insights on global and local issues of environmental concern and introduce fundamental concepts and policies related to housing.

Unit I Components of Nature and Ecology

9

Meaning and components of nature; Basic concepts of ecology, process of flow of material, water, energy, invasion, succession, perdition, regulatory forces, adaptation, tropic levels, food chains, food web, ecological pyramids; Ecology and their relevance to planning; Modifications in natural environment, causes and consequences.

Unit II Global & Local Concerns for Environment

9

Evolution of human settlements; Civilizations and impact on environment; Contemporary environmental discourse; Green agenda and brown agenda; Global environmental movement; Environment and poverty; Environmental management and environmental planning; Global warming, climate change; Biological diversity; Brunt land's Commission's Report; Agenda 21; Club of Rome Report; UNEP charters.

Unit III Environmental Resources: Consumption, Conservation and Recycling

9

Environmental resources and ecosystem services; Concepts of natural reserves; Consumption, conservation and recycling of resources; India's environmental programmes; Government of India's policies relating to forest, wildlife, hill, water resources, wastelands, hills, coastlines, oceans, etc.; local climatic zones; vulnerability analysis, Climate Smart Cities and Sustainable Framework.

Unit IV Housing and Built Environment

9

Significance of housing in national development goals; Housing as a basic entitlement - core issues of housing, factors affecting residential location, theoretical knowledge of ecological, neo-classical, institutional approach to housing; estimating housing shortage, housing need, current methods of demand assessment, typologies of housing, housing norms; Densities and standards; Urban sprawl and environmental damages; Gender based planning of neighbourhoods and human settlements.

Unit V Housing Sectors, Acts and Policies

9

Affordable Housing; Housing for the low-income groups – slums and squatter settlements, investment in housing in public and private sectors; Cooperative housing, objectives and principles, management and financing of housing projects; Acts, policies and programmes; Comparative policy analysis.

Total: 45 Periods

Outcomes:

- Understanding of the housing issues and environmental concerns in settlement planning

References:

- Thomas L. Daniels (2014). The Environmental Planning Handbook for Sustainable Communities and Regions. Planners Press, American Planning Association.
- Jetske A. Bouma, Pieter J. H. van Beukering (2015). Ecosystem Services: From Concept to Practice. Cambridge University Press.
- Van Bortel, Gerard, Vincent Gruis, Joost Nieuwenhuijzen & Ben Pluijmers, (Ed.) (2018), Affordable Housing Governance and Finance: Innovations, partnerships and comparative perspectives. Routledge, London.
- Nicholas Dagen Bloom, Lawrence Vale (2015). Public Housing Myths: Perception, Reality, and Social Policy. Cornell University Press.

MPIS115 - Infrastructure Planning	Subject Category	TC
	Number of Credits	3
	Lecture Periods per Week	2
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practicals	-
	Total Periods per Week	3

Objectives:

- To develop skill sets pertaining to provision of physical and social infrastructure services in urban and regional planning.

Unit I Introduction to Infrastructure Planning 9

Importance of infrastructure, objectives of the utilities, services planning and implications on public health and environment; Role of physical planner in planning of utilities and services; Role of line agencies in municipal areas; jurisdiction and scope of work of line agencies; Resilient Infrastructure, Smart cities and its infrastructure.

Unit II Physical Infrastructure 9

Water and Waste Water Scheme, Layouts of distribution system; IUWM, Water and Waste water treatment methods, Low-cost sanitation methods and storm water drains; Zero discharge systems; Integrated Solid Waste Management; MSWM 2000. Environmental Policy 2006; Urban Energy Systems and Civic services. Service Level Benchmarks.

Unit III Social and Economic Infrastructure 9

Types of social infrastructure; Health care - essential service, availability, access and utilisation, standards, public and private institutions, policies, National Rural Healthcare Mission, hierarchy of health care establishments; Education - primary and secondary educational institutions, standards, policies, right to education (RTE); Public and community spaces – recreational, safety and security; Distributional services, Economic Infrastructure.

Unit IV Transportation and Land use Integration 9

Introduction to transport and travel; Understanding travel from the mobility, economic, social-psychologist, time/space perspective; Factors affecting land use-transport integration, and tools for land use and transport integration, land use transport cycle, importance of accessibility, Transportation planning process; Introduction to four stage modelling; Demand and supply of transport; Congestion pricing; Transport Pricing, Basic transport economic model; SLBs; Introduction to carbon footprint.

Unit V Formulation of DPR for Infrastructure Services 9

DPR and its importance; contents of DPR; broad sequences to DPR formulation; capabilities required to prepare a DPR; DPR evaluation, Project Cost, Institution Framework, Project Financial Structuring, Project Phasing, Project O&M planning, Project Financial Viability & Sustainability .

Total: 45 Periods

Outcome:

- Knowledge and skillsets on planning for infrastructure services at urban, rural and regional level.

References:

- Dinesh M, Omer T, Michael S, Michael J, (2009), Road safety in India: challenges and opportunities. University of Michigan, Transport Research Institute.
- Government of India, (2010), Service level benchmarks for urban transport. Ministry of Urban Development. http://urbanindia.nic.in/programme/ut/Service_level.pdf
- Jaun de Dios Ortuzar, Luis G. Willumsen, Wiley, (2011), Modelling Transport (4th Edition), Routledge.
- Jean-Paul Rorigue, Clauue Comtois, Brian Slack, (2006), *The geography of transport systems.* Routledge

MPIS116 - Socio-Economic Dimensions in Planning	Subject Category	TC
	Number of Credits	3
	Lecture Periods per Week	2
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practicals	-
	Total Periods per Week	3

Objectives:

- To provide an understanding of the society and the economy of the nation and its importance in spatial planning.

Unit I Introduction to Sociology

9

Definition and scope of sociology; Concepts-society, social systems, social structure, institution and organisation; Understanding society- theories and methods; Sociology and planning, Planning and Sociology; Man – Environment relations and traditional spatial planning practices; Need for Demographic studies.

Unit II Social Groups, Social Issues, Rural and Urban Sociology

9

Social groups, social stratification, social exclusion and social inclusion; Agrarian, industrial and modern society and spatial formation; Linking social structure and physical structure of village and urban settlements; Sociology of formal and informal settlements in cities and towns; sustainable society and liveable neighbourhoods; making of smart homes, communities and neighbourhoods.

Unit III Demography and Planning

9

Traditional and modern theories of population, population dynamics, Population patterns in India and the World; Distribution & structure of population, Population change causes & implications, demographic characteristics of population and their measures, population growth and development, natural growth and migration of population. 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. population projections, cohort analysis;

Unit IV Applied Economics

9

Definition of economics - fundamental economic principles and concepts related to urban and regional planning; Basics of macro, meso and microeconomics, law of demand and supply- its relevance in planning; Goods, Market, factors of production; Economic concepts of land; Economic rent, land values, market mechanism and land use pattern. Employment mobility and analysis of distribution vis-a-vis place of residence; Economic base theory and techniques; economic development and growth indicators; economic growth vs development.

Unit V Socio-Economic aspects of Physical Planning

9

Social mix and Urban neighbourhood Planning, communities and neighbourhoods, employment, housing and land use transformation; Urban rich, middle and poor and socio-spatial mobility; Children youth, women, aged and differently abled people and spatial planning; Social and economic Auditing and Social and economic Impact Assessment and urban development. Disaster, Resilience, climate change and socio-economic relevance of physical planning.

Total: 45 Periods

Outcome:

- Exposure to concepts, theory and issues relating to socio-economic aspects in urban and regional planning

References:

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, Vol. 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. Jan L, Christopher M. (2012), The Urban Sociology Reader. Routledge, London.

Second Semester

MURP121 - Urban Planning Studio	Subject Category	SC
	Number of Credits	15
	Lecture Periods per Week	3
	Tutorials Periods per Week	-
	Studio/Lab/Workshop/Practical's	12
	Total Periods per Week	15

Objective:

- This studio provides exposure to urban planning and enables students to understand the context, urban complexities, situations and emerging issues.

The studio focuses on urban areas of different scales ranging from small towns to metropolitan cities. The exercise enables students to comprehend the issues related to the identified urban area, undertake a relevant literature review, conduct field studies and surveys, and assess the native characters reflecting the Traditional Knowledge Systems. Prepare land use plans, analyse sectors and propose interventions. These may include preparation of sustainable development plans, sector specific plans, DPRs and formulation of strategies by integrating environmental aspects.

Total: 225 Periods

Outcome:

- Basic knowledge and skillset to prepare spatial plans for urban areas
- Capability to prepare comprehensive development plan/ sector-specific plans for the projected plan period

References:

1. Dutsche Gesellschaft fur Internationale Zusammenarbeit (2012), Land use Planning; Concepts, Tools and Applications. BMZ, Federal. Ministry for Economic Co-operation and Development, Germany.
2. Eisner Simon (1968), Concepts for Preparation of Land use Plan for Planning Units, Simon Eisner and Associates Publications, California.
3. Government of India (Ministry of Housing and Urban Poverty Alleviation) (2011), Report of the Working Group on Urban Strategic Planning Steering Committee on Urban Development and Management. New Delhi.
4. 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.

MURP122 – Geomatics and Analytics in Planning	Subject Category	JC
	Number of Credits	3
	Lecture Periods per Week	1
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practical's	1
	Total Periods per Week	3

Objectives:

- To equip with the concepts of geo-informatics and computing skills in the relevant software, associated scientific tools, and their relevance and applicability in urban and regional planning.

Unit I Basic Spatial Statistics

9

Data exploration and spatial statistics for urban areas, evaluation, description and representation of spatial data quality, effect of inaccuracy on spatial data analysis. effect of data aggregation and disaggregation, MAUP (Modifiable Areal Unit Problem), Integration of spatial data of different quality Map matching. 3D volumetric analysis and modelling; Condition assessment of specific areas, Quantitative measurement of landscape surfaces; Vulnerability mapping and Monitoring.

Unit II Advanced Statistics

9

Point pattern analysis: Point Sets and Distance Statistics, Nearest neighbour methods Hotspot and cluster analysis; Spatial autocorrelation and Spatial regression for urban phenomena; multi-criteria decision-making tools, land suitability analysis, Factor analysis; Cluster analysis

Unit III Application of Remote Sensing in Planning

9

Digital images – satellite and aerial photography, resolutions, geo-referencing, projections, image processing, LULC, Change detection, UHI, digital elevation models, and stereo data analysis.

Unit IV Network Analysis and Land Use Models

9

Network analysis tools (vehicle routing problems, shortest path analysis, closest facility analysis, etc); Emerging and advanced technology - web-enabled GIS, GPS tracking and monitoring; Automating GIS Workflows with the model builder and advanced visualisations; Space Syntax analysis; Vulnerability mapping and Monitoring. Big data and application of simulation techniques and platforms like Agent-Based modelling, ANN - Matlab, Cellular automaton concepts - MOLUSCE and System Dynamics approach.

Unit V Emerging Geo-Spatial Technology and Data

9

Mobile geo-spatial data collection, cadastral and aerial mobile mapping, emergency response planning; Introduction to Google earth engine; Framework of geo-spatial data, interactively connected users and tools, Agreements on geo-spatial standards, Policies to facilitate data capturing, access to geo-spatial data, data driven approach, Institutional arrangements, Use of SDI to communicate spatial data, issues, guidance and services for urban and regional planning; Integrating virtual, augmented, mixed reality simulation technologies in Planning.

Total: 45 Periods

Outcome:

- Knowledge and skill set on application of geo-spatial techniques and related software in urban and regional planning

References:

Course Structure and Detailed Syllabus for M.Plan (URP) with effect from A.Y 2024-25 onwards

1. Helen Briassoulis (2020), Analysis of Land Use Change: Theoretical and Modeling Approaches, University of the Aegean.
2. Anil K. Jamwal (2008), Remote Sensing and GIS, Jnanada Prakashan, Delhi.
3. Cambell, J.B. (2002), Introduction to Remote Sensing, Taylor & Francis, London.
4. Jan Van Sickle (2010), Basic GIS Coordinates, Second Edition, CRC Press; 2 Edition, NY.
5. Richards, J.A. and Xia, X. (2006), Remote Sensing Digital Image Analysis: An Introduction, Birkhauser, London.
6. O'Sullivan, David and David J. Unwin (2010), Geographic Information Analysis, 2nd Edition, John Wiley & Sons, Inc., Canada. ISBN-13: 9780470288573; ISBN-10: 0470288574
7. De Smith, Michael J., Paul A. Longley and Michael F. Goodchild (2013), Geospatial Analysis: A Comprehensive Guide to Principles, Techniques and Software Tools, 4th Edition; Troubador Publishing Ltd ISBN-13: 9781905886609; ISBN-10: 1905886608



MURP123 - City and Metropolitan Planning	Subject Category	TC
	Number of Credits	3
	Lecture Periods per Week	2
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practical's	-
	Total Periods per Week	3

Objectives: To introduce urban growth, systems, linkages between city and region, problems and issues of metro and mega cities and planning for the metropolitan areas.

Unit I Introduction 9

Historical evolution of metropolitan planning - historical development of metropolitan planning and its impact on current urban landscapes, global urbanization trends, and implications for metropolitan planning strategies. concept and approaches to metropolitan planning; theorising the city- chicgo school, postmodern school, poststructuralist school; critical urban theory.

Unit II Metropolitan Regions 9

Delineation techniques of metropolitan areas; primate city; metro and mega cities-issues, processes and trend; urban culture.

Unit III Urban Rural Continuum 9

Urban sprawl and suburbanization; core-periphery; urban sprawl projections. global city and city regions; urban agglomeration and peri urban development, urban and rural transformation.

Unit IV Urban Economy 9

Urban economies; cities as growth engines; economic restructuring: the post 1973 world; neoliberalism; globalisation and cross border trade practices; gentrification and the revanchist city; public space and right to the city.

Unit V Metropolitan Planning in Contemporary Practices and Global Strategies 9

Defining sustainability and sustainable development, Sustainable Development Goals (SDGs), Millennium Development Goals (MDG's), contemporary approaches in metropolitan regions, multidimensional poverty indexes; urban physics and its implications on metropolitan planning. different innovative cluster approaches; introduction to sustainable cities, green cities, smart cities, digital, intelligent cities and resilient cities etc.

Total: 45 Periods

Outcome:

- Knowledge on cities, city sub-systems, regions, and their governance to promote sustainable development by keeping the urban economy as a catalyst.

References:

1. Karsten Zimmermann, Daniel Galland, John Harrison (2020), Metropolitan Regions, Planning and Governance.
2. Leckrone, J. Wesley. 2006. Metropolitan Planning Organizations, Federalism in America: An Encyclopedia.
3. Brenner, Neil; Marcuse, Peter; Mayer, Margit, (2011), Cities for People, Not for Profit: Critical Urban Theory and the Right to the City, Routledge, NY.
4. Bruegmann, Robert (2005), Sprawl- A Compact History, University of Chicago Press Books.
5. Harvey David (1973), Social Justice and the City, Baltimore, Johns Hopkins University Press.
6. Sassen Saskia (2012), Cities in a World Economy, 4th ed. Thousand Oaks, CA: Pine Forge Press. London.

MURP124 - Land Economics and Management	Subject Category	TC
	Number of Credits	3
	Lecture Periods per Week	2
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practical's	-
	Total Periods per Week	3

Objectives: To provide students with an overview of the land economics to spatial planning and issues.

Unit I Land as a Resource 9

Land as natural, economic, finite and productive resource; concern for land; concepts of land resource management; land development models.

Unit II Land as a Fiscal Tool 9

Transit-oriented development and town planning schemes; concepts of land rent, welfare economics and principles, land values, rents, levy of development charges, betterment fees, property taxation, economic restructuring and market mechanisms which influences/regulates the urban land use.

Unit III Valuation of Property & Development Charges 9

Valuation of property – principles and practices; private ownership and social control of land; disposal of land, land development charges and betterment levy; land use regulations, RERA, compensation and requisition taxation of capital gain on land versus public ownerships, economic aspects of land policies at various levels of decision making, land development potential analysis.

Unit IV Land Value Capture Mechanism 9

Changing land values in urbanized and urbanizing areas; land value capture taxes; land markets – legal and illegal in the core and fringe areas of metropolitan cities; property markets.

Unit V Cost Benefit Analysis & Case Studies 9

Process – CBA, discount rate, net present value, sensitivity analysis, valuation, risk and uncertainty, case studies

Total: 45 Periods

Outcome:

- Knowledge and ability to understand the importance of land and its management in settlement planning.

References:

1. Josh Ryan-Collins, Toby Lloyd, Laurie Macfarlane & John Muellbauer (2017), Rethinking the Economics of Land and Housing
2. Government of India (Directorate of Income Tax, Ministry of Finance) (2009), Guidelines for Valuation of Immovable Properties, Directorate of Income-Tax (PR, PP & OL) Mayur Bhawan, New Delhi.
3. Government of India (Ministry of Urban Development and Town and Country Planning Organisation) (2007), Model Guidelines for Urban Land Policy, New Delhi.
4. Shirley Ballaney and Bimal Patel, (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.
5. Vidyadhar K. Phatak (2013), Land Based Fiscal Tools and Practices for Generating Additional Financial Resources, Ministry of Urban Development, GOI & the World Bank.
http://jnnurm.nic.in/wp-content/uploads/2014/09/Final-Report-LBFT_28Aug2014.pdf.

MURP125 - Planning Legislation and Governance.	Subject Category	TC
	Number of Credits	3
	Lecture Periods per Week	2
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practical's	-
	Total Periods per Week	3

Objectives: The course discusses the evolution of planning legislations, legislative implementation mechanisms and governance arrangements in the Indian context; producing equitable, inclusive, and sustainable urban environments through institutional framework and implementation mechanisms towards sustainable governance.

Unit I Legislation Framework, Government & Governance System In India 9

Evolution of planning legislation and overview; Concept of Law; Sources of law (custom, legislation and precedent); meaning of the term of law, legislation, ordinance, bill act, regulations and bye-laws; significance of law and its constitutional relationship to urban planning. Definition, concepts and types of administrative divisions and notified planning boundaries of India, Features of the constitution of India, Democracy and Government, 73rd & 74th Constitutional Amendments; Decentralized governance system in India, urban and regional governance.

Unit II Participatory Municipal Governance 9

Municipal infrastructure service delivery system of water, health, sanitation, security and poverty reduction - Spatial Access, Inclusion of infrastructure in informal settlements and Urban local govt case studies. Legislations relating to urban art commissions; Co-operative Societies Acts; PIL etc Special Purpose legislations viz; Special Economic Zones (SEZ); Special Investment Region (SIR); National Data Sharing and Accessibility Policy-2012 (NDSAP-2012); Spatial Data Infrastructure (SDI) Act; Democracy and participatory governance, public participation theories, Information communication system and local government – Public Relations and Local Government; Good Governance index and indicators; collaborative and sustainable governance.

Unit III Legislation Related to Use & Control of Land 9

Introduction to Land Acquisition Act, 1894; Land Acquisition, Rehabilitation and Resettlement Act, 2013; Judicial precedents; Legislations controlling the change of land use and development for non-agricultural purposes, Urban Land (Ceiling and Regulation) Act, 1976 and repeal; development control regulations and building byelaws, sub-division regulations, fire and airport regulations; special regulations, accommodation Reservation; Rent Control Acts; Apartment Ownership Acts; Contract Act; Transfer of Property Act; The estate duty Act; Easements Act; Slum improvements and clearance Acts.

Unit IV Environmental legislations 9

Environmentalism; Evolution of environmental laws in India; Law of Torts, National Environmental Policy – Pollution control acts – air, water and environmental protection acts, EIA notification, Forest and wildlife act; other important international environmental laws, NGT, archaeological sites and remains of national importance; CRZ notification, MoEFCC guidelines and notifications.

Unit V Governance and e-Governance 9

Meaning and form of e-Governance at national and international experiences in rural and urban areas – institutional and organization change – e-Governance system, e-service and e-participation, m-governance, e-Readiness of local government, e-Governance for villages, districts, towns and smart cities in India and abroad.

Total: 45 Periods

Outcome:

- Knowledge on urban and regional legislations and governance and its constitutional relevance to urban and regional planning in the Indian context.

References:

1. Uttam Chand Shah (2023), Planning Legislation Covering Urban & Regional Planning and Environmental Laws in India.
2. Basu, Durga Das (2013), Introduction to the Constitution of India, LexisNexis Butterworths Wadhwa Nagpur, India.
3. Gol (Government of India, Ministry of Urban Development), JNNURM, Implementation of 74th Amendment and Integration of City Planning and Delivery Functions, State Level Reform. http://jnnurm.nic.in/wp-content/uploads/2011/01/Mandatory_Primer_1-2-Implementation_CAA_Planning.pdf
4. Mathias Finger and Sultana (Eds.) (2012), e-Governance a Global Journey, Global Publications, London.
5. Mohamed Abdul Razak (2011), e-Governance Vs. e-Readiness in Urban Municipal Governments in Tamil Nadu, India. In Piaggeri, Americas, Sand & Castelnovo (Eds.), Global Strategy and Practice of e-Governance, Examples around the World, Global Publications, London.

MURP1210 - Inclusive Planning	Subject Category	OE
	Number of Credits	3
	Lecture Periods per Week	2
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practical's	-
	Total Periods per Week	3

Objectives:

- To provide exposure to the emerging concepts and issues concerning inclusive community approaches in planning. To include the disadvantaged, marginalized and other vulnerable sections/groups into the main stream of planning.

Unit I Elements of Inclusivity 9

Definition, concepts, elements of inclusivity; Exclusion and related issues, disparities, social fragmentation, existing divisiveness; Marginalization, exclusion and access to services

Unit II Community Planning 9

Definition, concepts and methods; database creation for inclusive planning / community development through community participation and management; community mapping, language and discourse in planning, interactive planning, multi-directional flows in decision-making, communicative rationality and democratic processes, building consensus in planning

Unit III Poverty, Informal Sector & Inequality 9

Definition, dimensions, deprivation, measurement, defining parameters; absolute and relative poverty; Informal Sector – Definition and dimensions; migratory impulses and their association with growth of informal sector; Role of informal sector in housing; Housing and basic needs - lack of essential infrastructure; poor condition of existing services.

Unit IV Disparities and Equal Opportunities 9

Critique of neo-liberalism; power and hegemony; forms of marginalization; right to the city approach; feminist planning theory; Caste and religion –planning and designing for the differently-able persons, elderly, children, and pregnant women;

Unit IV Policies Programs, Model related to Inclusive planning 9

Planning legislation and related programmes; Management for the vulnerable sections; Formal institutions of inclusion and community; Role of central and state governments; Private and voluntary organizations; Development indicators; People-centric and participatory planning; bottom-up approaches; Incremental approach; Low cost alternatives and institutional reforms approach; Public-private partnership; PRA techniques and participatory GIS;

Total: 45 Periods

Outcome:

- Knowledge on integrated community planning approaches and tools for inclusive planning

References:

- Ali Sabir (2006), Dimensions of Urban Poverty, Rawat Publications, the University of Michigan.
- Brown A and Kristiansen A. (2009), Urban Policies and the Right to the City: Rights, Responsibilities and Citizenship; UNESCO, UN-Habitat Publication.
- Kundu, Amitabh and Sharma, Alakh N (2001), Informal Sector in India: Perspectives and Policies, Institute for Human Development & Institute of Applied Manpower Research, the University of Michigan.
- Singh R.U., Thakur A.K. (2009), Inclusive Growth In India, Deep & Deep Publications Pvt. Ltd., New Delhi.

MURP1211 - Social Impact Assessment and Rehabilitation Planning	Subject Category	PE
	Number of Credits	3
	Lecture Periods per Week	2
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practical's	-
Total Periods per Week	3	

Objectives:

- Aims to equip students with essential knowledge and skills in land acquisition, relocation, rehabilitation, social impact assessment, enabling them to contribute effectively to urban planning and sustainable development initiatives.

Unit I Land Acquisition, Relocation and Rehabilitation

9

Land conflicts, land classification, land rights and governance, how land conflicts delay development projects, Legal, Policy and Regulatory Framework; Better understanding of SIA process as per the Land Acquisition, Rehabilitation and Resettlement Act, 2013, Fair Compensation and Transparency in Land Acquisition, DFDR Issues & Complexities; Sustainable Resettlement.

Unit II Impact of Relocation and Rehabilitation

9

Compensation, income restoration and relocation; Terms of Reference (ToR), Preparation of land acquisition plan, Asset evaluation (movable and immovable property), Estimation of compensation and R&R package, Development of entitlement framework, budgeting and grievance redress; Learning from case studies – Relocation and rehabilitation of non-title holder. Estimation of intangible losses; Learning from case studies – management of Common Property Resources (CPR)

Unit III Social Impact Assessment (SIA)

9

Framework for Measuring Impact, Theory of Change, Breadth of Impact, Depth of Impact, Target Population identification, Philosophies Guiding Social Impact Analysis, Why Measuring Social Impact Matters, current and future approaches to impact measurement and data collection, Tools and instruments for conducting SIA surveys, Filling the Socio-Economic survey questionnaire, collation and interpretation of data, Categorization of impact and determining its significance;

Unit IV Social Media Analysis

9

Collecting and extracting social media data, use of data collection APIs, analysis of structured and unstructured data; sentiment analysis; Case example.

Unit V Case Studies and Application of Techniques In SIA

9

SIA content analysis, case studies, strategies for describing qualitative data, Literature critique, Focus group data analysis, Stakeholder consultation techniques, Citizen Science Approach, Opinion analysis techniques like AHP, Delphi, etc., Concept Mapping, The Card Sorting Activity in SIA.

Total: 45 Periods

Outcome:

- Navigate legal, policy, and regulatory complexities in land acquisition, while mastering methodologies for conducting social impact assessments and qualitative data analysis, fostering sustainable urban development.

References:

1. Burdge, Rabel J. (2003) The practice of social impact assessment background, *Impact Assessment and Project Appraisal*, 21:2, 84-88, DOI: 10.3152/147154603781766356
2. Esteves, A.M., D. Franks, and F. Vanclay. (2012). *Social Impact Assessment: the state of the art*, *Impact Assessment and Project Appraisal*, 30:1, 34—42, DOI: 10.1080/14615517.2012.660356
3. Mathur, H.M. (ed.) *Assessing the Social Impact of Development Projects: Experience in India and other developing countries*. Springer 2015.
4. World Bank. (2004). *Involuntary Resettlement Sourcebook: Planning and Implementation in Development Projects*. Washington DC: World Bank
5. Frank Vanclay and H.A. Becker. (2003). *The International Handbook of Social Impact Assessment: Conceptual and Methodological Advances*. Cheltenham, UK: Edward Elgar Publishing Ltd.
6. *Right to Fair Compensation and Transparency in Land Acquisition, Resettlement and Rehabilitation Act, 2013*
7. *SIA Rules of the Government of India and various state governments*



MURP1212 - Smart Cities	Subject Category	OE
	Number of Credits	3
	Lecture Periods per Week	2
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practical's	-
	Total Periods per Week	3

Objectives: To provide exposure to the emerging concepts and issues concerning future smart cities.

Unit I: Urban Evolution and Intelligent Systems 9

City branding initiatives: Sustainable cities, eco-cities, green cities, digital cities, intelligent cities, future cities, global cities, and smart cities, Future Cities and Smart City discourses in the USA, Europe, and the Gulf States, Application of the main themes of smart cities globally, Sensible cities, Intelligent systems and their role in urban development.

Unit II Smart Cities: Components and Concepts 9

Components and various dimensions of a smart city: Smart economy, smart mobility, smart environment, smart people, smart living, and smart governance, Smart city capitals and various forms of capital; Physical, human, social, intellectual, Smart energy systems; Integration of energy efficiency in urban planning; renewable energy and energy-efficient technologies.

Unit III Social Dynamics in Smart Cities 9

Social Processes as agents of change in city and society, the role of smart people, living, working, mobility, public facilities, open data, role of ICTs in developing smart cities, criticisms and challenges for implementing smart city concepts.

Unit IV Smart Urbanism 9

Urban reforms and Smart city initiatives, Smart city mission, latest developments relating to smart cities in India and global context, budgetary allocations, urban reform policies and capacity building initiatives by the government of India; Schemes, policies and best practices.

Unit V Measuring Smartness and Global Insights 9

Toolkits, indexes, and frameworks developed to measure smartness in Indian and global contexts; urban information systems and their role in city planning and management for smart cities; case studies in Indian and global contexts.

Total: 45 Periods

Outcome:

- Capability to formulate plans and proposals to achieve sustainable smart cities

References:

1. Samuel D. Simpson (2023), The Future of Smart Cities.
2. Ravi Srinivasan, Tamim Sookoor, and Sabina Jeschke (2017), Smart Cities: Foundations, Principles, and Applications. Houbing Song. Wiley Blackwell Publications.
3. Alex David Singleton, Seth Spielman, David Folch (2018), Urban Analytics (Spatial Analytics and GIS). Sage Publications.
4. Schahram Dustdar, Stefan Nastić, Ognjen Šćekić (2017). Smart Cities: The Internet of Things, People and Systems. Springer Publications.
5. Maria Sashinskaya (2015). Smart Cities in Europe: Open Data in a Smart Mobility Context. Create space Independent Publishers.

MURP1213- Urban Renewal and Heritage Conservation	Subject Category	PE
	Number of Credits	3
	Lecture Periods per Week	2
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practical's	-
	Total Periods per Week	3

Objectives:

- Comprehensive understanding of urban renewal, redevelopment and conservation equipping with the knowledge and skills to analyze, plan, and implement sustainable development projects in diverse urban contexts.

Unit I Foundations of Urban Design and Renewal 9

Understanding urban form and renewal, components and scope of urban design, historic development and principles, scale and relationship with architecture and planning.

Unit II Evolution and Morphology of Cities in Renewal Context 9

Historical evolution of cities, determinants of urban form and renewal, impact of topography and environment, city planning and design principles in renewal, case studies.

Unit III Land Development Models and Strategies for Renewal 9

Introduction to land development models, strategies for brownfield and greenfield renewal and redevelopment, environmental assessment and remediation, community engagement and sustainable design, infrastructure planning and provision.

Unit IV Heritage Conservation Planning Implementation Techniques 9

Process of Heritage Conservation: Heritage Value Assessment and Significance of Monuments; Identification of heritage sites, potential sites for conservation: Listing and Grading of Heritage Properties and their precincts (w.r.t International and National Approaches viz. UNESCO, World Heritage Cities, Cultural Landscapes, Guidelines by TCPO, INTACH, AMASR Act, National Monument Authority etc.)

Unit IV 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.

Total: 45 Periods

Outcome

- Students will be able identify key determinants of urban form and renewal, evaluate strategies and practices in urban renewal and redevelopment, and apply theoretical principles to real-world case studies to propose innovative solutions for contemporary urban challenges.

References:

1. Ray Perrault (2022), Urban Regeneration: Methods, Implementation and Management.,ISBN: 978-1-68507-558-3
2. Pablo Holwitt(2020), Urban Renewal in India: Accommodating People, Ideas and Lifeworlds in Mumbai's Redeveloping Chawls (Routledge Series on Urban South Asia).
3. Banister Fletcher (1996), A History of Architecture, Routledge.
4. Mark M. Jarzombek (2013), Architecture of First Societies: A Global Perspective, John Wiley Publications.
5. Robert E. Stipe, (Ed.) (2003), A Richer Heritage: Historic Preservation in the Twenty-First Century, Chapel Hill: University of North Carolina Press.

MURP1214- Systems Thinking and System Dynamics	Subject Category	OE
	Number of Credits	3
	Lecture Periods per Week	2
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practical's	-
	Total Periods per Week	3

Objectives:

- This course will introduce students to systems thinking and system dynamics (SD) methodology, to model, simulate, analyse, understand and discuss complex issues. This course will introduce model-building with components of system dynamics: using CLDs and SFDs notations. Examples and scenarios will be drawn from various social, economic, environmental and ecological systems.

Unit I Introduction to Systems Thinking and System Dynamics**9**

Introduction to Systems Thinking; Collections Versus Systems; Defining characteristics of systems; The Iceberg, A close look at the Systemic Behaviour; Looking for a sign: Loops and Labels; System's view in urban and Regional Planning; Formulation of dynamic problems; Introduction to System Dynamics; definition of System Dynamics; System Dynamics Theory; Principles of systems and cybernetics; Fundamental concepts within system thinking and system design; causality, Little's Law, feedback; Systems, Dynamics, and Sustainability.

Unit II Causal Loop Diagrams and Mental Models**9**

Brief History of Theory of Change; Theory of Change Diagrams; Theory of Change approach; Evaluation; Policy; Logic models; Log frame; The Process of Modelling: From Mental Models to Simulation Models; Reference Mode Diagrams; Pattern-Oriented Modelling; Group Model Building; Hamster Population model; Brief History of Causal Loop Diagrams; Causal Loop Diagram and basic elements; Creation-Process of Causal Loop Diagrams; Commons Issues and 'Tricks of the Trade'; Benefits of Causal Loop Diagrams.

Unit III System Structures and System Archetypes**9**

Systems Thinking Tools; Brainstorming Tools; Dynamic Thinking Tools; Structural Thinking Tools; Computer-based Tools; Systems Archetypes; Drifting goals; Escalation; Fixes that Fail; Growth and underinvestment; Limits to Success; Shifting the Burden/Addiction; Success to the Successful; Tragedy of the Commons; Balancing Loop with delays.

UNIT IV The System Dynamics Modelling**9**

System Dynamics Method; Owing to its Use In The Club of Rome Commissioned Report, Limits To Growth (1972); Dynamics of Economic and Population Growth Within the Constraints of the Natural World; Power of System Dynamics and Modelling, Both As Analytic And Thinking Tools; Problem Definition; Model Conceptualisation; Model Formulation; A Stock And Flow Diagram And System Dynamics Model; Model Verification And Validation; Example; Validation And Simulation; Developing Different Alternative Policy Scenarios Under Various Conditions; Analysis And Interpretation Of The System Dynamics Model.

UNIT V Communication Using System Dynamics Models**9**

Development Of Governing Equations And The Solution Of Governing Equations; Development Of Governing Equations By Methods Appropriate To Each Subfield; Unifying System Level Analysis; Via Time Domain Solutions, Frequency (Laplace Domain) Solutions, And Numerical Simulation In Simulink For Model-Based Design (A Modern System Simulation Tool); Model-Based Design; Examples And Scenarios Will Be Drawn From Various Social, Economic, Environmental And Ecological Systems; Application/ Communication Of SD Models

Total: 45 Periods

Outcome

- Students will be able to comprehensively solve complex system problems by understanding their nonlinear behaviour over time, utilizing stocks, flows, feedback loops, functions, and time delays. They will also be able to apply systems-thinking frameworks and causal-loop diagram archetypes to construct and analyze systems-thinking problems.

References:

1. John Sterman, Business Dynamics: Systems Thinking and Modeling for a Complex World, McGraw-Hill (2000).
2. Craig W. Kirkwood, System Dynamics: A Quick Introduction, Arizona State University (1998) [Available online at: <http://www.public.asu.edu/~kirkwood/sysdyn/SDIntro/SDIntro.htm>]
3. Michael R. Goodman, Study Notes in System Dynamics, Pegasus Communication (1989)
4. Online learning material: <https://www.systemdynamics.org/distance-learning>

Third Semester

MURP211 - Regional Planning Studio	Subject Category	SC
	Number of Credits	15
	Lecture Periods per Week	3
	Tutorial Periods per Week	-
	Studio/Lab/Workshop/Practical's	12
	Total Periods per Week	15

Objectives:

- This studio intends to facilitate students with the required knowledge and skills for preparing a regional plan, so as to achieve sustainable and harmonious development in the future; through a comprehensive understanding of its setting, context, linkages, legal frameworks and hierarchy.

The studio focuses on regional planning, which deals with different components, scales, and contexts of regions such as metro regions, resource regions, special regions and district planning. The exercise enables students to comprehend the issues related to the identified regions, and their links with higher and lower-order plans and also further assess the native characters reflecting the Traditional Knowledge Systems. It involves a comprehensive review of relevant literature, policies, frameworks, field studies, documentation, analysis and proposed interventions. These may include preparing sustainable regional plans, DPRs for selected sectors, and formulation of strategies.

Total: 225 Periods

Outcome:

- Basic knowledge and skillset to formulate regional plans
- Capability to prepare sectoral proposals and policies

References:

1. Dewin G. Flittie (1970), The Delineation of a Region-an Alternative Technique, Journal of Growth and Change, Wiley Online Publications, Vol. 1, No.1, pages 34-38.
2. 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.
3. Misra R.P (2002), Regional Planning: Concepts, Techniques, Policies and Case Studies, Concept Publishing Company, New Delhi.
4. Yupo Chan (2011), Locational Theory and Decision Analysis-Analytics of Spatial Information Technology, Springer Publications, Berlin.

MPIS 212 Research Methods	Subject Category	TC
	Number of Credits	3
	Lecture Periods per Week	2
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practical's	-
	Total Periods per Week	3

Objectives:

- To initiate the planning thesis by enabling students to identify a topic and then develop a proposal and methodology in detail besides providing them with the required theoretical inputs on the syllabus contents.

Unit I Introducing Research

9

What is research? types of research, basics of academic and applied research; Different approaches to research; Research philosophies – positivist and phenomenological philosophies. Introduction to elements of research: grounded theory, epistemology, ontology, theoretical perspective, methods, methodology; Justification of choice and use of methods and methodology; Paradigms in research, Research Ethics

Unit II Developing Thesis

9

Methodology: Identification of research problem; Research questions; Formulation of hypothesis; Writing aims, objectives, scope and limitations; Content development - Developing contextual background; Research design; Review of relevant literature; Quantitative – surveys, experimental, longitudinal, cross-sectional studies; Qualitative – case studies, action research, ethnography, participative enquiry, grounded theory. Identification of suitable research methods/ techniques/ instruments; Data collection – questionnaires, sampling techniques, observation, interviews; Analysis - qualitative and quantitative analysis, data synthesis; Research outcome –research findings, recommendation and conclusion.

Unit III Data Analytics in Research

9

Data analytics; multi-variate data analysis; simulation and modelling techniques in urban planning- statistical, geo-spatial, mathematical, econometric, System Dynamics, network-based, agent-based modelling etc., by employing various software and analytical tools and hypothesis testing.

Unit IV Field Work Plan

9

Survey format preparation, study area identification and map preparation; Work plan schedule.

Unit IV Research Communication

9

Research vocabulary, reading – notes taking, material organisation, indexing; Technical writing – content synthesising, paraphrasing, citation and referencing; Academic writing – research proposal /synopsis, abstract writing, report writing and mapping; Presentation: effective oral communication – content structuring, voice modulation, body language, audio-visual aids, handouts.

Total: 45 Periods

Outcome:

- Basic knowledge on research methods and techniques
- Capability to formulate research design and research proposal

References:

1. Keith F. Punch (2013), Introduction to Social research: Qualitative and Quantitative Approaches. Sage Publications, London
2. Crotty M. (2012), Introduction: The Research Process, the Foundations of Social Research, Meaning and Perspective in the Research Process. Sage Publications, New Delhi.
3. Frankfort, Nachmias, C., & Nachmias, D. (2008), Research methods in the social sciences. 7th ed. New York: Worth
4. Neville, Colin (2007), An Introduction to Research and Research Methods. Effective Learning Services, School of Management, University of Bradford



MURP213 - Rural Planning and Development	Subject Category	TC
	Number of Credits	3
	Lecture Periods per Week	2
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practical's	-
	Total Periods per Week	3

Objectives:

- To provide exposure to the concepts, initiatives, systems and trends of rural planning and development.

Unit I Introduction

9

Concepts - village as an organic entity- the physical, social, economic, administrative structure of the village. Land use and land cover in rural areas. Social, economic and ecological constraints for rural development. Indian rural society, caste, class and gender structures, smart village, need for decentralized and integrated rural development planning and localisation of SDGs in rural development.

Unit II Rural Settlement Structure and Development

9

Hierarchy of settlements in rural India, Rural development: concept, hierarchy and nature, approaches. Land reform system, Gramin swaraj, Sarvodaya movement, Five Year Plans and Rural Development; Planning process at National, State, Regional and District levels; Planning, development, implementing and monitoring organizations and agencies and RADPFI guidelines; Development initiatives and their convergence; Special component plan and sub-plan for the weaker; Database for local planning.

Unit III Rural Institutional Systems: PRIs and Participatory Planning

9

73rd Constitution (Amendment) Act – XI schedule, Devolution, Decentralization, Process of empowerment and consensus orientation, Panchayati Raj institutions – organizational linkages; Various committee and their suggestion for PRI. District Administration – Evolution of District Administration, structure and functions, accountability of District level development Departments – Role of District Magistrate/District collector vis-à-vis various Departments' hierarchies. District planning and local planning.

Unit IV Resource-Based Rural Development

9

Agricultural Policy and Food Security, irrigation and Watershed Management, agro-based industries, tourism development: agro and eco-tourism; Climate Change and its effects on the Rural Economy, Resource mapping, resource mobilization including social mobilization; Disasters and Resilience in rural areas.

Unit V Emerging trends: Rural Development

9

Institutionalization; Information Technology and rural planning, marginalized sections and rural planning, rural marketing, rural finance, GPSDP, GDDP, Aspirational Districts Programme and contemporary approaches in rural development.

Total: 45 Periods

Outcome:

- Rural systems, planning approaches and administration

References:

- Dutt.R, Sundaram.KPM (2008), Indian Economy, S Chand Publication, New Delhi.
- Macivier R .M and Page.C (1981), Society –An Introductory Analysis, Macmillan Pvt Ltd, India.
- Moseley, Malcolm J. (2003). Rural Development: Principles and Practice; SAGE Publications Pvt. Ltd, London.
- Singh.K (2009), Rural Development Principles, Policies and Management, SAGE Publications Pvt. Ltd., New Delhi.

MURP214 - Project Planning and Management	Subject Category	TC
	Number of Credits	3
	Lecture Periods per Week	2
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practical's	-
	Total Periods per Week	3

Objectives:

- To introduce aspects of project planning, management, implementation, monitoring and appraisal.

Unit I Introduction to Project Planning 9

Introduction to Projects, Project Classification, Nature of planning projects, Project life cycle, Methodology for project identification and formulation; Preliminary screening, Project Rating, Detailed project reports, and feasibility studies

Unit II Project Formulation and Appraisal 9

Projects and planning issues including sectoral policy at local, State, and National levels; Project appraisal; technical, financial, social, economic, environmental, Approaches of appraisal - World Bank and Asian Development Bank methods, institutional approaches, SCBA, UNIDO etc.

Unit III Project Management 9

Project characteristics; techniques of management, Importance of project management; PERT & CPM; new techniques of management by objective (MBO).

Unit IV Pre-implementation Planning Phase 9

Work-Break Down Structure; Network Analysis; CPM, PERT; Resource Levelling and Allocation; Time-Cost Trade Off Aspects. Hands on exercise using Project Management Software like MS Project, Primavera, etc.

Unit V Project Implementation, Monitoring and Evaluation 9

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; Case studies in urban and regional planning projects.

Total: 45 Periods

Outcome:

- Capability to formulate, appraise and manage the projects related to spatial planning

References:

1. Albert Lester (2007), Project Management, Planning and Control, Butterworth Heinemann Publishing House, United Kingdom.
2. Harold R. Kerzner (2013), Project Management: A Systems Approach to Planning, Scheduling, and Controlling, John Wiley & Sons, New Delhi.
3. Jose Maria Delos Santos (2013), Project Management Absolute Beginner's Guide – A Book Review, QUE Publishing house, New Jersey.
4. Ramakrishna K (2010), Essentials of Project Management, PHI Publishing house, New Delhi.

MURP215 - Disaster Preparedness and Management	Subject Category	TC
	Number of Credits	3
	Lecture Periods per Week	2
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practical's	-
	Total Periods per Week	3

Objectives:

- To provide an overview to disasters, critical understanding of the processes and stakeholder roles involved in reducing the impact of disasters on settlements.

Unit I Calamities and Disasters – Introduction 9

Concepts, and definitions of disaster, hazard, calamity, risk, vulnerability, resilience and adaptation; Types of Disasters - urban disasters, pandemics, complex emergency situations; Types of impacts - in terms of special groups, castes, class, gender, age, location, disability; Global trends in disasters; Disasters and biodiversity loss; socio economic aspects of disasters.

Unit II Cycle of Disaster Management 9

Stages of Disaster; Immediate Response, Rescue and Relief; Common Issues with Reconstruction and Rehabilitation; Safety, prevention, and preparedness measures; Mitigation measures, structural and non-structural measures; Role of different agencies in disaster management - Government, INGOs, NGOs and CBOs, role of economy, ecology and social networks in determining resilience.

Unit III Risk, Vulnerability and Coping Methods – Disasters in the context of Development

Understanding Risk through Livelihoods Analysis; Factors affecting Vulnerabilities; Differential Impacts of disasters; Ability to recover, coping methods, alternative adjustment processes; Relevance of indigenous knowledge, appropriate technology and local resources; Hazard and vulnerability profile of India; Disasters in the context of development projects, Land use change and adaptation to Climate Change,

Unit IV Role of SDI and Communities in Disaster Management 9

Information and data in the context of emergency situations: Role of geospatial tools in the field of disaster management; Community and disasters.

Unit IV Planning for Disaster Management 9

Steps for formulating a disaster risk reduction plan; Preparation of state and district disaster management plans; DM Act and Policy, Relevant policies, plans, programmes and legislation: Master plans, disaster preparedness and post disaster management.

Total: 45 Periods

Outcome:

- Knowledge on types of disasters, risks, vulnerability, coping methods and planning for disaster management in settlement planning.

References:

- Abarquez I. & Murshed Z (2004), Community Based Disaster Risk Management: Field Practitioner's Handbook. ADPC, Bangkok.
- Alexander D. (2000), Introduction in 'Confronting Catastrophe', Oxford University Press, London.
- Government of India (2005), Disaster Management Act 2005, Government of India, New Delhi.
- Government of India (Ministry of Home Affairs) (2004), National Disaster Response Plan (NDRP Report), New Delhi.

MURP2110 - Human Settlements and Climate Change	Subject Category	OE
	Number of Credits	3
	Lecture Periods per Week	2
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practical's	-
	Total Periods per Week	3

Objectives:

- To study human settlements in climate change perspective and understand strategies for adaptation and spatial planning tools for mitigation of GHG emissions.

Unit I Introduction to Climate Change

9

Concern, human settlements as a major source of emissions, vulnerability to impacts of climate change, emission paths, strategies, location of settlements, socio-economic characteristics, cultural practices and governance structure, suitable interventions

Unit2 Climate Risk and Vulnerability in the City

9

Risk due to climate change, risk assessment, impacts due to flooding, cyclones and landslides, impacts on infrastructure, urban governance and participation

Unit3 Urban GHG Emissions

9

Sectoral emission – residential, industrial, transport, waste disposal, reducing emissions and urban carbon footprints, carbon trading and other alternatives

Unit4 Climate Change Mitigation and Low-Carbon Cities

9

Energy efficient approaches, Urban climate governance, transportation and energy systems for the future, land-use planning and compact cities, future and smart cities, reducing the urban heat islands, protecting urban water systems from climate change risks

Unit5 Adaptation – Towards Climate Resilient Cities

9

Includes climate change adaptation – migration as adaptation, climate change experiments and alternatives, Climate change, Vulnerable Regions and Groups – Tropics, farmers, gender, children, poor and migrants

Total: 45 Periods

Outcome:

- Estimating urban GHG emissions, risk assessment, vulnerability and adaptation to climate change

References:

- Harriet Bulkeley (2013), Cities and Climate Change, (Routledge Critical Introductions to Urbanism and the City), Routledge, New York.
- Lehmann S (2015), Low Carbon Cities- Transforming Urban Systems, Routledge Publications, New York.
- Nikolas Bader and Raimund Bleischwitz (2009) Measuring Urban Greenhouse Gas Emissions: The Challenge of Comparability, Cities and Climate Change, Vol. 2 (3).
- P.Neeraj et al (2008), Climate Resilient Cities: A Primer on Reducing Vulnerabilities to Disasters, World Bank Publications.



MURP2111 - Special Area Planning	Subject Category	PE
	Number of Credits	3
	Lecture Periods per Week	2
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practical's	-
	Total Periods per Week	3

Objectives:

- To equip the students with the knowledge of addressing issues of urgent concern. The syllabus focuses on preparation of special area plan with an emphasis on the coastal / port areas.

Unit I Introduction

9

Concepts and components of special area planning; Composition of land uses of special area plan versus conventional land use theories; The practice related to the activities of government, N.G.O and related to local area planning.

Unit II Urbanization and Growth

9

Urbanisation trends, development and redevelopment activities; illustrative framework to guide and regulate the development fostering economic growth; growth factors and compatible land uses; Corridor development, industrial, coastal corridors

Unit III Special Area Plans

9

Key challenges, design considerations, site characteristics and functionality of a space which become base/guide for site planning and land use regulations and development control rules; Hill area plans, Corridor plans, Special investment region and special economic zones, coastal area planning, Port area planning and logistic hubs.

Unit IV Policies

9

Land use plans and development control regulations to ensure comprehensive development; Improving the quality of life and socio-economic growth of a specified area; Changes in the policies, land use regulations and emergence of growth factors result in significant change in the land use and growth patterns.

Unit IV Case Studies

9

Socio-economic-environmental, profile-multiple agencies and complex boundaries; review of development projects and its socio-economic-environmental impacts; Coastal area/port cities, planning and governance; healthy urban planning and healthy cities.

Total: 45 Periods

Outcome:

- Delineation of special areas, ability to carry out studies and develop comprehensive proposals.

References:

- Kulshreshtha, S.K. (2012) Urban and Regional Planning in India - A Handbook for Professional Practice. SAGE Publications India Private limited, New Delhi.
- Mookkiah Soundarapandia (Ed.) (2012), Development of Special Economic Zones in India: Impact and implications, Vol.2, Concept Publishing Company Pvt. Ltd., New Delhi.
- Municipal Corporation of Delhi (2011), Redevelopment Plan/ Scheme of Special Area. New Delhi. mcdonline.gov.in/townplan/.../Final%20Special%20Area%20Report.pdf
- Robert Kay Jaqueline Alder (2005), Coastal Planning and Management, Taylor and Francis Publications.

MURP2112 - Future Settlements	Subject Category	OE
	Number of Credits	3
	Lecture Periods per Week	2
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practical's	-
	Total Periods per Week	3

Objectives:

- To make students aware and expose to changing scenario in the spatial order of cities and regions as well as the emergence of virtual societies in the World. Also, to enable the students to understand the use and power of emerging new technologies and social networks among communities across the city, country and globe demand for paradigm shift in the spatial planning outlook and governance edge.

Unit I Planning and Technology

9

Traditional settlements to modernity, spatial planning and technology interface, socio-economic planning and technology interface, planning cities and local technologies, technological innovations and responsive city planning, planning responsive technology versus technology responsive planning.

Unit II Cities-Technology-infrastructure

9

Transportation and technology, water, sanitation and technology, energy efficient technology for home, street, neighbourhoods and city, telecommunication, health and education, security and safety for buildings and people in cities.

Unit III Techno Cities

9

Digital cities, virtual cities, technology parks, smart planning and infill development; Planning, design and communication system, socio-economic and environmental impact of Techno Cities.

Unit IV Governance

9

Role of law and technology, administration and organization, industry and corporate, communities and people in building smart cities and smart communities, participatory planning.

Unit IV Case Studies

9

Best Practices in India and around the world.

Total: 45 Periods

Outcome:

- Knowledge on the emerging and latest trends for development of future cities

References:

- Brkovic, M. B. (2004), Planning in the Information Age: Opportunities and Challenges of E-Planning, CORP.
- Intelligent Community Forum (2012), Innovation and Employment in the Intelligent Community, Intelligent Community Forum, pp1-35.
- Komakech, D. (2005), Achieving More Intelligent Cities, Municipal Engineer, pp259-264.
- Nohrstedt, (2002), Digital Planning: Integrating New Information and Communication Technologies in Urban Planning.

MURP2113 - Tourism Planning and Development	Subject Category	OE
	Number of Credits	3
	Lecture Periods per Week	2
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practical's	-
	Total Periods per Week	3

Objectives:

- To provide exposure to students on the concepts, planning, development issues related to tourism planning and development.

Unit I Introduction to Tourism 9

Definitions, scope, nature, types, key determinants, characteristics of tourism; tourism hubs; tourism as an industry; growth of tourism in developed and developing world; problems and issues of tourism; Sociology of Tourism – leisure, recreation, travel and tourism; gender and tourism development; history, language and multi-cultural aspects of Tourism

Unit II Tourism Sector – Impacts 9

Relationship between Tourism and Urban Development, environment and local community; Tourism multiplier and forecasting methods; capacity building and carrying capacity; planning for tourism projects; Tourism-cultural and social aspects; Eco-tourism and local social and economic development. Cross Boarder Tourism- State, National and Global Perspective.

Unit III Planning for Tourism 9

Tourism Plans- plan components; social and spatial planning of origin–transit-destination area planning; Role of multiple Government authorities and agencies involved in tourism development; Role of private sector, local community in tourism development; Tourism circuits – planning and development of regions.

Unit IV Tourism Infrastructure 9

Need for infrastructure support planning such as accommodation transportation, water supply, solid waste disposal, health, safety and information system; Tourist Infrastructure Services: Tourist guides, interpretation and signages; Impact on local life style; Revenue streams and resource; Package tourism and pricing; Tourism-Travel and hospitality.

Unit IV Tourism Policies and programs 9

Tourism policies at state and national levels; Government and community interventions to develop tourism sector; Governance Vs e-governance and tourism development. Global Tourism Governance -Sustainable Development Goal, World Tourism Organization Initiatives.

Total: 45 Periods

Outcome:

- Knowledge on infrastructure and policies/programs concerned to tourism planning and development.

References:

- Ni Made Ernawati and Ni Made Rai Sukmawati (2023), Tourism Business Planning and Development.
- Robin Nunkoo and Stephen L.J. Smith Trust (2014) Tourism Development and Planning (Contemporary Geographies of Leisure, Tourism and Mobility)
- Clare A. Gunn, (1993), Tourism Planning: Basics, Concepts, Cases, Taylor & Francis Group, London
- David L. Edgell Sr., (2006), Managing Sustainable Tourism: A Legacy for the Future, Haworth Press.
- James Mark, (2003), Tourism and Economy, Versa Press, London.
- Martha Honey, (1998), Ecotourism and Sustainable Development: Who Owns Paradise? Island Press.

MURP2114 - Planning and Politics	Subject Category	PE
	Number of Credits	3
	Lecture Periods per Week	2
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practical's	-
	Total Periods per Week	3

Objectives:

- To provide political economic perspective of planning special context to the cities of world and also to equip students on theorizing cities through the lens of politics. The course will focus more on case studies across the world.

Unit I Introduction	9
Basic concepts; Structural Adjustment and cities; Contested cities.	
Unit II Politics and Society	9
Postmodern Urbanism; Critical urban theory; Civil Society and Political society; Collaborative governance and citizen participation.	
Unit III Spatial Politics	9
Spatial politics: Politics of public space; Politics of environment.	
Unit IV Political Movements	9
Terrorism and surveillance, Politics of radical movements, Social movements; Case studies from: Chipko movement, Narmada movement, wall street protest, Cochabamba water riot.	
Unit V Politics and Policy	9
Urban policy and the politics of spatial and temporal scale; Power and urban hegemony; Capacity and social capital, Politics of scale and networks of association in public participation GIS; Mega projects and politics of city development.	

Total: 45 Periods

Outcome:

- Capability to understand the political economic perspective of planning

References:

- Ghose, Rina (2005), The Complexities of Citizen Participation through Collaborative Governance. Space and Polity, 9(1): 61-75.
- Harvey David (2012), Rebel Cities; Verso Books, London.
- Smith, Neil (2002), New globalism, new urbanism: Gentrification as Global Urban Strategy, Oxford University Press, New York.
- Thompson L and Tapscott C (Ed.) (2010), Citizenship and Social Movements- Perspectives from the Global South; Zen Books, London.

MURP2115 - Advanced Quantitative Methods for Planning	Subject Category	OE
	Number of Credits	3
	Lecture Periods per Week	2
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practical's	-
	Total Periods per Week	3

Objective: Equip students with advanced quantitative methods for planning, covering data mining, big data analysis, programming languages, and simulation techniques, to facilitate informed decision-making in urban planning and public policy.

Unit I Data mining and Application Program Interface (APIs) 9

Introduction to data mining, machine learning, AI; formulation of research questions in machine learning framework; Build, evaluate, compare, select and interpret various models; Introduction to API and tools to interact with network-based APIs.

Unit II Big Data and Policy Research 9

Big data landscape; comparison of big data, survey data and other data commonly used in spatial planning and public policy; Advantages and Disadvantages of data sources for research. Problems and Errors in Big data. Big data sharing policy. Policy analysis.

Unit II Programming languages for Data Analytics – part 1 9

Introduction to R/Matlab, basics on data coding, testing and analysis, data visualisation, model building and queries. Introduction to SQL, DBMS.

Unit III Programming languages for Data Analytics – part 2 9

Introduction to Python, basics on data analysis using python, coding, variables, data structures, logical functions and exercises, packages and computational environment.

Unit IV Simulation techniques in planning 9

System dynamics, agent-based modelling, ANN, network and location optimisation methods, discrete event simulation and stack-flow models, monte-carlo method, multimethod simulation, computational fluid dynamics models, AI generated models, etc.

Total: 45 Periods

Outcome:

- Knowledge on data mining, API utilization, and predictive modeling to formulate research questions effectively and interpret models accurately. They will also develop proficiency in R, MATLAB, Python, and SQL for streamlined data analysis, visualization, and modeling processes.

References:

1. Data Analysis, Visualization, and Modelling for the Data Scientist by Thomas Mailund, 2017.
2. Analytics and Data Science : Advances in Research and Pedagogy / edited by Amit V. Deokar, Ashish Gupta, Lakshmi S. Iyer, Mary C. Jones.
3. Applied Data Analysis for Urban Planning and Management by Alasdair Rae and Cecilia Wong, 2021.
4. Jinyan Huang and Shahbaz Hussain (2023). Advanced Quantitative Research Methods.



MURP2116 - Principles of Sustainable Development	Subject Category	OE
	Number of Credits	3
	Lecture Periods per Week	2
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practical's	-
	Total Periods per Week	3

Objective: To equip students with a comprehensive understanding of sustainable development principles, goals, and practices, including the environmental, economic, and social pillars, as well as strategies for monitoring and assessing progress towards global sustainability targets.

UNIT I Sustainability Concept and Principles 9

Core problems and cross-cutting issues of the 21st Century; History and emergence of sustainable development; Environmental, Economic and Social Pillars of sustainability; strong and weak sustainability-mind-sets for sustainability: earthly, analytical, precautionary, action and collaborative; syndromes of global change: utilisation syndromes, development syndromes, and sink syndromes; Sustainable development models; Rio Principles of sustainable development ; Peoples Earth Charter; Ten Principles of the UN Global Compact.

UNIT II Sustainable Development Goals and Society 9

Social shortfall and ecological overshoot of nations; 'United Nations' 2030 Agenda for sustainable development; 17 sustainable development goals and targets, indicators and intervention areas; The Unjust World and Inequities; Quality of Life; Poverty, Population and Pollution; Combating Poverty; Demographic dynamics of sustainability; Actions to reach the 2030 Agenda for sustainable development; Sustainable Livelihood Framework-Health, Education and Empowerment of Women, Children, Youth, Indigenous People, Non-Governmental Organizations and Local Authorities.

Unit III Ecosystem Conservation and Restoration 9

Conservation Vs restoration - Prevention, Precaution, Preservation and Public Participation - Selection and implementation of restoration interventions; Sustainable Consumption and Production; Investing in Natural Capital- Agriculture, Forests, Fisheries - Food security and nutrition and sustainable agriculture- Water and sanitation-Biodiversity conservation and Ecosystem integrity; Ecotourism; Climate Change-Paris agreement; Mitigation and Adaptation; Safeguarding Marine Resources.

UNIT IV Science, Technology and Innovation for Sustainability 9

Science and Technology for sustainable development; Applying science, technology and innovation for Water, Energy, Mobility, Circularity, Housing, Equity and Empowerment; Nature of sustainable development strategies and current practice; Resource efficiency; Decoupling-Sustainable Cities ;Green Buildings - Sustainable Transportation; Sustainable Mining; Sustainable Energy; Inclusive Green Growth and Green Economy; Financial frameworks and resources to advance the Agenda-2030.

UNIT V Monitoring and Assessing Progress 9

Sustainability in global, regional and national context; Actions to localizing SDGs; Performance indicators of sustainability and Assessment mechanism; Approaches to measuring and analysing sustainability; limitations of GDP- Data-Driven Assessment of Sustainability; Carbon Foot Print, Ecological Footprint; Human Development Index-Business charter for sustainable development; Sustainable Development Goals (SDGs)



Environment, Social, and Governance (ESG), Corporate Social Responsibility (CSR) and Sustainability-ESG Reporting and Corporate Sustainability

Total: 45 Periods

Outcome:

- Explain and evaluate current challenges to sustainability, including social, environmental, and economic issues which prevail in the system and analyse the social, environmental, and economic dimensions of sustainability in terms of UN Sustainable development goals.

References:

1. A guide to SDG interactions: from science to implementation, International Council for Science, Paris, 2017.
2. Tom Tietenberg, Lynne Lewis, Natural Resource Economics: The Essentials, Taylor& Francis, 2019.
3. Ajay Ahlawat (2019), Sustainable Development Goals: Directive Principles for Sustainable India by 2030, MyARSu.
4. John Asafu Adjaye, "Environmental Economics for non-economists – techniques and policies for Sustainable Development", World Scientific, 2005.
5. Karel Mulder (2017), Sustainable Development for Engineers - A Handbook and Resource Guide, Routledge Taylor and Francis, 2017.
6. Klaus Bosselmann (2017), The Principle of Sustainability - Transforming Law and Governance, Routledge.
7. NITI Aayog (2022), The Indian Model of SDG Localization, and other Reports of NITI Aayog, Government of India.

MURP2117- Globalization & Social Equity	Subject Category	OE
	Number of Credits	3
	Lecture Periods per Week	2
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practical's	-
	Total Periods per Week	3

Objectives: The course aims to integrate globalisation's impact on community equity into urban planning pedagogy, fostering awareness of disruptive forces and transnational perspectives on societal issues for future application and research.

Unit 1: Climate Change in a Globalized World **9**

Introductory overview, causes, impacts, mitigation strategies, climate plans and policies, UN climate change policies, resilience within sustainable development, climate policies at national, state, and local levels, urbanization, globalization, drivers of Anthropocene.

Unit 2: Sustainable Development Goals **9**

Urban and regional sustainability approaches, SDGs, MDGs, carbon credits, net-zero cities, environmental justice, urban sustainability solutions, interplay of SDGs, SDG-6 and SDG-11, intricate interrelationships of SDGs, direct connection to climate change, role of sustainability.

Unit 3: Urban and Regional Metabolism **9**

Understanding and measuring flows: water, storm water, solid and liquid wastes, energy, food, raw materials, interconnections of flows, cyborg concept, critical infrastructure, urban resilience, connections between flows, micro to macro scales, critical infrastructure with case studies.

Unit 4: Climate Impacts, Movements, and Emerging Practices **9**

Movements, protests, battlegrounds, climate action, sustainability, climate refugees, bourgeois environmentalism, environmental justice, global inequality, climate impacts, intersectionality, environmental, social, economic vulnerabilities, emerging practices, case studies.

Total: 45 Periods

Outcome:

Students will gain critical thinking skills to analyze globalisation's impact on social equity and apply interdisciplinary knowledge to address urban challenges. They will develop transnational perspectives and practical solutions for urban planning and research.

References:

1. Lo, F., & Marcotullio, P. J. (2000). Globalisation and Urban Transformations in the AsiaPacific Region: A Review. *Urban Studies*, 37(1), 77–111.
2. Grime, K. (1976). Book Review: An Introduction to Regional Planning: by JOHN GLASSON. London: Hutchinson Educational.
3. Stephen Wheeler (2009) Regions, Megaregions, and Sustainability, *Regional Studies*, 43:6, 863-876.
4. Guy, M. E., & McCandless, S. A. (2012). Social Equity: Its Legacy, Its Promise. *Public Administration Review*, 72, S5–S13.
4. Frederickson, H.G. (2010). *Social Equity and Public Administration: Origins, Developments, and Applications: Origins, Developments, and Applications* (1st ed.). Routledge.
5. Marzano, F. (2001). Globalisation and Social Equity. In: Franzini, M., Pizzuti, F.R. (eds) *Globalisation, Institutions and Social Cohesion*. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-662-04407-0_14
- Brown-Saracino, J. (2010). *The Gentrification Debates: A Reader* (1st ed.). Routledge. <https://doi.org/10.4324/9781315881096>

MURP2118 – Indian Knowledge Systems	Subject Category	OE
	Number of Credits	3
	Lecture Periods per Week	2
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practical's	-
	Total Periods per Week	3

Objectives: This course aims to explore Indian knowledge systems, encompassing diverse fields such as astronomy, mathematics, cosmology, and philosophy, fostering a deep understanding and appreciation of India's intellectual heritage in the field of physical planning through the study of various Shastric Texts and Ancient treatises.

Unit 1: Bhāratīya Civilization and Development of Knowledge System 9

History the Akanda Bharath – its genesis - antiquity of civilization, Traditional Knowledge System, The Vedas, Main Schools of Philosophy, Ancient Education System, the Takṣaśilā University, the Nālandā University, Ghatikas as learning centres, Knowledge Export from Bhārata – Development of Arts – Development in the field of literature, music, medicine

Unit 2: Science, Astronomy, Mathematics, and Technology 9

Concept of Matter, Life, and Universe, Vedic Cosmology and Modern Concepts, Bhāratīya Kāla-gaṇanā, Kerala School for Mathematics and Astronomy, History and Culture of Astronomy, Concepts of Zero and Pi, Vedic Mathematics and Number System . Impact of mathematics, astronomy , astrology , philosophy , nature in the traditional planning principles - Texts from various Shastric sources – Brief on Inscriptional records

Unit 3: Town Planning and Architecture 9

Evolution of urban settlements in ancient India, Principles of town planning in ancient Indian cities – Ancient treatises in Town planning – Manasara, Mayamatham, Sthapadya Veda, Samaranga Suthradhara -,– Metaphysical Interpretation of spaces – Concept of Time and Space in planning .Case studies of ancient Indian cities: Mohenjo-Daro, Harappa, Varanasi, Madurai and Kancheepuram . Influence of religious and cultural beliefs on urban design and architecture- Temple centric development of towns , Sustainability and resilience in ancient urban planning practices.

Unit 4 – Indian Knowledge system on Town Planning 9

Town planning principles – classification of towns and villages based on function , typology, layout, shape and so on .Critical appraisal of Site selection, orientation , Site analysis, layout, spatial organisation of streets and open spaces , Landuse Regulations from the various treatises- Exercises on layout preparation – The grammar and syntax in the urban planning process- Application of the vedic planning principles – case studies – water management system and irrigational practices ,land classification land reclamation , administration , environmental governance, sustainability , urban regulation – their relevance in the present context

Unit 5 – Case Studies 9

Legacy of ancient planning systems and their relevance to modern urban management, Lessons for contemporary urban governance from ancient Indian practices – Documentation of villages /towns/waterfronts/ waterbodies / indigenous practices

Total: 45 Periods

Outcome:

Students will develop critical thinking skills and the ability to assess the relevance of Indian knowledge systems in contemporary contexts, contributing to a broader understanding of India's cultural and intellectual legacy.

References:

1. Acharya, P K, 1931, Indian architecture according to Manasara- Silpasastra (Manasara Series Vol 2), Munshiram Manoharlal
2. Shamasastri, R., 1915, Kautilya's Arthasastra, Sri Raghuvver Printing Press
3. Acharya, Prasanna Kumar, 1933, Architecture of Manasara (Manasara Series Vol 1,4 & 5), Bharatiya Kala Prakashan
4. Pride of India- A Glimpse of India's Scientific Heritage edited by Pradeep Kohle et al. Samskrit Bharati (2006). 2. Vedic Physics by Keshav Dev Verma, Motilal Banarsidass Publishers (2012). 3. India's Glorious Scientific Tradition by Suresh Soni, Ocean Books Pvt. Ltd. (2010)

Fourth Semester

MURP221 - Planning Thesis	Subject Category	T
	Number of Credits	24
	Lecture Periods per Week	2
	Tutorials Periods per Week	-
	Studio/Lab/Workshop/Practical's	22
	Total Periods per Week	24

Objectives:

- To enable the students to undertake original and independent study / research in the form of terminal thesis / project on a topic of their choice approved in the previous semester.

Each student shall prepare thesis on a topic approved by the department under the guidance of the allotted supervisor. The thesis will provide an opportunity to the student to synthesise and apply the knowledge and skills acquired through the learning of various theories and practices during the course. The students are expected to work in various stages. Each student shall be required to present the work in the format as suggested by the department i.e., orally, graphically, written, etc. The thesis 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. Each stage shall be evaluated by a panel. These stages may broadly be outlined as:

Unit I Thesis Proposal

Unit II Development of Suitable Methodology / Framework

Unit III Literature Search and Review

Unit IV Data Collection, Analysis and Synthesis

Unit IV Findings / Proposals

Total: 225 Periods

Outcome:

- The final output shall be in the form of a draft report, 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 thesis shall also be presented orally in external jury by each student in the form of visuals / drawings as necessary for each topic.

References:

- Elizabeth A. Wentz (2013), How to Design, Write, and Present a Successful Dissertation Proposal, Sage Publications.
- John Biggam (2015), Succeeding with Your Master's Dissertation: A Step-By-Step Handbook, Open University Press, McGraw Hill Education, UK.
- Murray, Rowena (2011), How To Write A Thesis, Open University Press, McGraw Hill Education, UK.
- Tayie, Sami (2005), Research Methods and Writing Research Proposals, Pathways to Higher Education, Cairo.

MURP222 - Development Finance	Subject Category	TC
	Number of Credits	3
	Lecture Periods per Week	2
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practical's	-
	Total Periods per Week	3

Objectives:

- To expose students to the various concepts, mechanisms and role of development finance and its relevance with various hierarchies of government systems.

Unit I Overview of Development Finance 9

Concept of development finance, Approaches, Development administration at National, State and Local level and the process of formulation, implementation and management, Structure of implementing authorities: Improvement trusts, Development authorities, Metropolitan Development Authorities and their relationship with local governments. Financial institution: concept, typology and their role.

Unit II Municipal Finance Institutions 9

Finance Commissions, fiscal agenda of development schemes and Sources of revenues; equities; loans; debt financing; Pooled finance development fund, national urban infrastructure fund, municipal bonds, miscellaneous sources.

Unit III Financial Management & Resources 9

Structure of finances, fiscal problems and issues of financial management, credit rating, Implications of 74th Amendment for municipal finance, expenditure pattern, bilateral and multi-lateral lending intuitions mobilizing resources for a project - financial resources, land resources, project resources, and other resources.

Unit IV Investment Planning 9

Link with spatial plans, process, components, investment needs, budgeting, financial investments in infrastructure and services.

Unit V Financing Mechanism 9

Financing of urban development, infrastructure and services – mechanisms and instruments, subsidy reduction, cost recovery, public private partnerships; Micro finance, Financial appraisal, investment appraisal; Financial risk – sources, measures and perspectives on risk, sensitivity analysis, property tax administration, rent control system.

Total: 45 Periods

Outcome:

- Knowledge on concepts and mechanisms for financing development and management.

References:

- Prasanna K. Mohanty (2016) Financing Cities In India: Municipal Reforms, Fiscal Accountability And Urban Infrastructure.
- Richard, Richard Hemming and H.Barry (2013), The International Handbook of Public Financial Management Centre for Aid and Public Expenditure.
- Allen. F, Yago. G (2013), Financing the Future, Market-Based Innovations for Growth, Pearson Publications.
- Gupta J. (2008), Privatisation of Municipal Finance in India, Atlantic Publishers and Distributors.
- Stephen Spratt (2008), Development Finance: Debates, Dogmas and New Directions, Routledge Publications.

MURP223 - Professional Practice and Ethics in Planning	Subject Category	TC
	Number of Credits	3
	Lecture Periods per Week	2
	Tutorial Periods per Week	1
	Studio/Lab/Workshop/Practical's	-
	Total Periods per Week	3

Objectives: To equip students with practical skills, ethical understanding, and industry-relevant competencies essential for success in their chosen profession.

Unit I Foundations of Planning Practice and Professional Ethics 9

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; Role of Planners in Urban Development Sector; Typical Responsibilities. Ethical frameworks, professional conduct, ethical dilemmas, equity, sustainability, accountability, societal interests, values, ethical challenges, moral hazards and contemporary issues in planning practice

Unit II Planning and Public Sector 9

Planning at national level, interstate level, state government level, district level, metropolitan level, and local level; Consultancy practice in the public sector; Role of government as a facilitator; Procurement of goods, works, consulting services, and non-consulting services; Bid Process and Its Management; E-tendering.

Unit III Private Sector Collaboration in Planning 9

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; Developing Terms of References (TOR); Drafting Expression of Interest (EOI).

Unit IV Joint Sector and Public-Private Partnership 9

Professional Practice in the Joint Sector; Understanding Joint sector; Public-private partnership; Models of PPP (case-based approach); Drafting Request for Proposal (RFP); Drafting a Concession Agreement.

Unit V Global Perspectives in Contemporary Planning Practice 9

International Urban Planning Practice: Effect of liberalisation, privatisation, and globalisation on planning practice; Models of the supply of services; Understanding GATS (General Agreement on Trade in Services); Role of Planners in Consultancy and Advisory; Role of Planners in Research & NGOs; Role of Planners as Entrepreneur;

Total: 45 Periods

Outcome:

- Technical communication, problem-solving abilities, and adherence to ethical standards, preparedness for real-world professional scenarios.

References:

1. Campbell, H. and Marshall, R. (1998) Acting on Principle: Dilemmas in Planning Practice, Planning Practice and Research, Vol.13, No.2, pp.117-128.
2. ITPI (Institute of Town Planners, India). 1986. Report of the task force on Professional matters urban development and the town Planner. ITPI, New Delhi.
3. Kulshreshtha, S.K. (2012) Urban and Regional Planning in India - A Handbook for Professional Practice. SAGE Publications India Private limited, New Delhi.
4. Madhusudan Apte, Prakash (2013), Urban Planning & Development an Indian Perspective.