CHOICE BASED CURRICULUM

FOR

MASTER OF PLANNING

(URBAN AND REGIONAL PLANNING)

DEPARTMENT OF ARCHITECTURE & PLANNING

BIRLA INSTITUTE OF TECHNOLOGY MESRA

RANCHI, INDIA

Effective from academic year 2026-27 onwards

Institute Vision

To become a Globally Recognized Academic Institution in consonance with the social, economic and ecological environment, striving continuously for excellence in education, research and technological service to the National needs.

Institute Mission

- To educate students at Undergraduate, Post Graduate Doctoral and Post-Doctoral levels to perform challenging engineering and managerial jobs in industry.
- To provide excellent research and development facilities to take up Ph.D. programmes and research projects.
- To develop effective teaching and learning skills and state of art research potential of the faculty.
- To build national capabilities in technology, education and research in emerging areas.
- To provide excellent technological services to satisfy the requirements of the industry and overall academic needs of society.

Department Vision

The underlying vision for the Department of Architecture and Planning is to make the department an academic knowledge hub that will actively contribute to the contemporary domain, by:

- Providing innovative professionals who will contribute wholesomely to nation building.
- Providing individuals who can make significant contribution to the advancement of the society.
- Preparing students for leadership roles in the fields of Architecture and Planning

Department Mission

The mission of the Department of Architecture and Planning is to foster a student-centered educational program in architecture and planning. The programs through its pedagogy which is heuristic and responsive to technological, cultural, and social environments, seeks to offer a diverse, inter-disciplinary and rigorous curriculum that will promote personal development and professional excellence. The Department is committed to:

- Imparting strong fundamental concepts to students and motivating them to find innovative solutions to architectural and planning problems independently
- Developing architects and planners with managerial attributes capable of applying latest technology with responsibility
- Creation of congenial atmosphere and excellent research facilities for undertaking quality research by faculty and students.

Programme Educational Objective for Master's in Planning (Urban and Regional)

1. To provide high quality education that prepares students to assume professional roles in the field of urban and regional planning by imparting sound knowledge in the core, allied and specialised subjects with the help of latest technologies and imparting compulsory training in practical field.

2. To prepare students to work in multi-disciplinary and challenging environment of the building industry in the managerial capacity of handling various urban and regional planning related projects with due respect to professional ethics and social obligation.

3. To orient students towards various research activities related to the field as well as other emerging fields of interest, which may lead them towards further studies and take up PhD program.

4. To engage in lifelong learning, additional and continual formal education, professional development, and self-study to provide high quality service to the building industry and overall academic needs of the society.

Program Outcomes (PO) for Master's in Planning (Urban and Regional)

A post-graduate shall

a) Be competent in applying advanced knowledge of urban and regional planning issues for the purpose of obtaining solution to a multi-disciplinary problem.

b) Gain skilful knowledge of complex planning problems and its analysis

c) Be proficient in arriving at innovative solution to a problem with due considerations to society, environment, ethics and legislation.

d) Be capable of undertaking appropriate research methods to solve an urban and regional problem to arrive at valid solution based on appropriate interpretations of data.

e) To demonstrate consciousness of societal and environmental issues relevant to professional practice and contribute to sustainable development.

f) Recognize the need for continuous learning and upgrade their planning knowledge for growth in their professional career.

SEMESTER I

Code	Name of the subject	L	T	P	Credit	Contact Hrs	Remarks
Programme Core (PC)							
ARP 26611	Planning History and Theory	3	0	0	3	3	
ARP 26612	Principles & Techniques of Planning	3	0	0	3	3	
ARP 26613	Housing and Community Planning	2	0	0	2	2	*2 credit Minor course*
ARP 26614	Infrastructure Planning	2	0	0	2	2	*2 credit Minor course*
ARP 26615	Transport Planning	2	0	0	2	2	*2 credit Minor course*
Value Added Course							
ARP 26616	Environmental Studies and Planning	2	0	0	2	2	*Value Added course*
Programme Elective (PE1)							
ARP 26617	Urban Design	2	0	0	2	2	
ARP 26618	Urban Regeneration and Conservation						
Non-Departmental (Mandatory Sessional)							
HS24131	Communication Skills I	0	0	3	1.5	3	
Departmental Lab / Skill Development							
ARP 26621	Planning Studio - Local Area Planning by applying Socio-Economic Tools	0	0	10	5	10	
ARP 26622	Planning Studio – Geo-Spatial Technologies	0	1	3	2	4	
	Semester total credit	**16**	**1**	**16**	**24.5 Credits**	**33 Hrs**	

SEMESTER II

Code	Name of the subject	L	T	P	Credit	Contact Hrs	REMARKS
Programme Core (PC)							
ARP 26651	City and Metropolitan Planning	3	0	0	3	3	
ARP 26652	Regional Planning	3	0	0	3	3	
ARP 26653	Research Methodology	2	0	0	2	2	*2 credit Minor course*
Value Added Course							
ARP 26654	Ethics and Human & Constitutional Values	2	0	0	2	2	*Value Added course*
Programme Elective (PE2)		2	0	0	2	2	*2 credit Minor course*
ARP 26655	Urban & Regional Infrastructure						
ARP 26656	Transport Corridors and Regional Development						
Non-Departmental Lab							
HS 24133	Communication Skills II	0	0	3	1.5	3	
Departmental Lab							
ARP 26661	Planning Studio-Development Planning	0	0	12	6	12	
	Semester total credit	**12**	**0**	**15**	**19.5 Credits**	**27 Hrs**	

SEMESTER III

Code	Name of the subject	L	T	P	Credit	Contact Hrs	REMARKS
Programme Core (PC)							
ARP 26711	District Planning and Rural Development	3	0	0	3	3	
ARP 26712	Real Estate Market and Land Management	2	0	0	2	2	
Open Elective/ MOOC							
	Open Elective I (OE)/MOOC	3	0	0	3	3	
Departmental Lab							
ARP 26721	Planning Studio - Regional Planning	0	0	12	6	12	
ARP 26722	Planning Studio – Thesis Preliminaries	0	0	4	2	4	
ARP 26723	Internship [8 weeks; to be undertaken by students during summer vacations, after 2nd semester, and credits will be included in 3rd semester]	0	0	0	2	-	
	Semester total credit	**11**	**0**	**16**	**18 Credits**	**27 Hrs**	

SEMESTER IV

Code	Name of the subject	L	T	P	Credit	Contact Hrs	REMARKS
Programme Core (PC)							
ARP 26751	Planning Legislation, Institutional Governance and Professional Practice	3	0	0	3	3	
ARP 26752	Project Planning, Management and Development Finance	3	0	0	3	3	
Research Project							
ARP 26761	Planning Studio-Thesis	0	0	0	12	-	
	Semester total credit	**6**	**0**	**0**	**18 Credits**	**06 Hrs**	
	Total Credit for four semesters				**80 Credits**		

SEMESTER

I

COURSE INFORMATION SHEET

Course code: **ARP 26611**
Course title: **Planning History and Theory**
Pre-requisite(s): None
Co- requisite(s): None
Credits: 03 L: 3 T: 0 P: 0
Class schedule per week: 03
Class: M. Plan
Semester / Level: I
Branch: Architecture and Planning
Name of Teacher: Ritu Agrawal

Course Objectives

This course enables the students:

A.	To understand economic, political, cultural, social and other forces shaping built environments in history.
B.	To understand the significance of theories in planning of settlements.
C.	To be sensitive to the notion of planning around the world.
D.	To value the planning concepts and philosophies in India.

Course Outcomes

After the completion of this course, students will be able to:

CO1.	To demonstrate appreciation and knowledge about history and theory of ancient cities' planning and development.
CO2.	To analyse various city planning concepts, physical forms and abstract theoretical formulations.
CO3.	To identify appropriate planning and management strategies in the urban and planning context.

Syllabus

Module 1: Evolution of Planning
Significance of the study of evolution of settlements; Cosmological and other influences, origins and growth of cities, effects of cultural influence on physical form; Evolution of Planning thought from ancient texts and treatise in India (Vedic Literature), Classification of settlements and plans of ancient Indian villages and towns.
Planning Characteristics in Indus valley civilization: Case Studies- Harappa and Mohenjodaro, Dolavera, Egyptian, Mesopotamian Greek and Roman Civilizations, BC period Towns in India, Silk Route Cities: Vaishali, Bhaghalpur, etc.
Medieval Town Planning in India; Town planning in ancient Deccan, Hoysalas, Vijaya nagara dynasties in town planning. Examples of Sri Rangam, Kancheepuram, and port town of Poompugar; Influence of Rajputs in Western India and their contribution to planning. Ancient river valley civilizations (Egyptian, Mesopotamian, Indus valley, Gangetic Region, Chinese and South American).

Module 2: Dimensions of Planning

Urban Processes Criteria of location and development of towns in history, Political, economic, technological, social and cultural factors which have shaped settlements through history, Indian city typologies and study of urban growth, decline, renewal in different cities based on function, location etc., Renaissance; Industrial and post-industrial cities; Model and New Town Movements; Town Improvement and City Beautiful Movements, Colonial cities in India and provision of infrastructure.

Module 3: Theories of Settlement Planning

Planning Theories by Ebenezer Howard, Camillo Sitte, Patrick Geddes and Clarence Perry, C.A. Dioxides, Lewis Mumford, F.L. Wright, Le Corbusier and Peter Hall; City as a living spatial entity; Concepts of landmark, axis, orientation; City form as a living space; City as a political statement: New Delhi, Chandigarh. (Case studies: Chandigarh, Gandhinagar, Bhubaneshwar, Industrial Towns, Amaravati, special Zones (SEZ) etc.).

Module 4: Planning around the World

Modernism and Post-Modernist Planning Thought; Neo-Marxist and Neo Liberal perspectives in Planning; Post positivist typology of planning theory, Comprehensive Rational Planning Approaches; Disjointed Incrementalism and Mixed Range Approach, Strategic Spatial Planning, Advocacy and Pluralism, Collaborative and Communicative Planning, New economic geography and city region, Global cities, 15 minute city, Sustainable Cities, Healthy City, Resilience City, New Urbanism and Smart Growth Developments.

Module 5: Planning in India

Post-independence Indian Planning and concept applications. Capital City (an amalgamation - Delhi; Chandigarh, Gandhi Nagar and Bhubaneshwar, Steel Cities, New Cities: Raipur; New Mumbai, New Okhla Development Authority, Greater Okhla Development Authority, National Urbanisation Policy (1988) and urban direction. Corridor Urbanisation (DMIC, Eastern Corridor, Quadrilateral and their influence in urban form and direction. Concept of City within City, Expanded Cities, and Census Towns concept. Geography of Gateway city region (High Power Committee, MOHUA).

Text books:

T1 Catanese and Snyder, Introduction to Urban Planning.
T2 Faludi, Andreas, Planning Theory.
T3 Gallion A. (1963). The Urban Pattern: City Planning and Design. D.V. Nostrand Company Inc, New York.
T4 Glasson, John, An Introduction to Regional Planning – Concept, Theory and Practice, Susesex.
T5 Hall P. (1998). Cities in Civilization: Culture Technology and Urban Order. Weidenfield and Nicolson, London.
T6 Hall P. (2014). Cities of Tomorrow: An Intellectual History of Urban Planning and Design since 1880. Wiley and Sons. Hoboken, New Jersey.
T7 Hall P. (2002). Cities of Tomorrow: An Intellectual History of Urban Planning and Design in the 21st Century. Blackwell Publications, Oxford.
T8 Margaret, Robert., An Introduction to Town Planning Technique.

Reference books:

R1 Ayyar V. (1915). Town Planning in Ancient Deccan. Law Printing Housing, Madras.

R2 Beauregard Robert A. (2020). Advanced Introduction to Planning Theory. Edward Elgar Publishing, Cheltenham.
R3 Dr. Singh Satvir (2019). Settlement Patterns and Planning in India. Akinik Publications, Delhi.
R4 Levy J. (2006). Contemporary Urban Planning. Prentice Hall, New Jersey.
R5 Lynch K. (1981). A Theory of Good City Form. Cambridge Publications, London.
R6 Nath R. (1995). Medieval Indian History and Architecture. APH Publishing Pvt. Ltd, New Delhi.
R7 Pojani Dorina (2023). Alternative Planning History and Theory. Routledge, London.
R8 Stein M. J. (1995). Classic Readings in Urban Planning. McGraw-Hill, New York.
R9 Ward S. (2002). Planning the Twentieth Century City: The Advanced Capitalist World. John Wiley & Sons. England.

Gaps in the syllabus (to meet Industry/Profession requirements)

POs met through Gaps in the Syllabus: Nil

Topics beyond syllabus/Advanced topics/Design: Nil

POs met through Topics beyond syllabus/Advanced topics/Design: Nil

Course Delivery methods
Lecture by use of boards/LCD projectors/OHP projectors
Tutorials/Assignments
Seminars
Mini projects/Projects
Laboratory experiments/teaching aids
Industrial/guest lectures
Industrial visits/in-plant training
Self- learning such as use of NPTEL materials and internet
Simulation

Course Outcome (CO) Attainment Assessment tools & Evaluation procedure

Direct Assessment

Assessment Tool	**% Contribution during CO Assessment**
Quiz I	10
Quiz II	10
Quiz III	10
End Sem Examination Marks	50
Assignment	10
Seminar	10

Assessment Components	**CO1**	**CO2**	**CO3**
Quiz I	√	√	√
Quiz II	√	√	√
Quiz III	√	√	√

End Sem Examination	√	√	√
Assignment	√	√	√

Indirect Assessment –

1. Student Feedback on Faculty
2. Student Feedback on Course Outcome

Mapping between Objectives and Outcomes

Mapping of Course Outcomes onto Program Outcomes

Course Outcome #	**Program Outcomes**					
	PO1	**PO2**	**PO3**	**PO 4**	**PO5**	**PO 6**
CO 1	3	2	2	3	2	2
CO 2	3	3	3	1	2	1
CO 3	1	3	3	2	3	3

Mapping Between COs and Course Delivery (CD) methods

CD	**Course Delivery methods**	**Course Outcome**	**Course Delivery Method**
CD1	Lectures by use of boards/LCD projectors/OHP projectors	CO1, CO2, CO3	CD1
CD2	Tutorials/Assignments	CO2	CD1, CD3
CD3	Seminars	CO3	CD1, CD2, CD3
CD4	Mini projects/Projects	-	-
CD5	Laboratory experiments/teaching aids	-	-
CD6	Industrial/guest lectures	-	-
CD7	Industrial visits/in-plant training	-	-
CD8	Self- learning such as use of NPTEL materials and internets	CO1, CO2, CO3	-
CD9	Simulation	-	-

Lecture wise Lesson planning Details.

Week No.	Lect. No.	Ch. No.	Topics to be covered	Textbook / References	COs mapped	Methodology used	Remarksby faculty if any
1.	L1, L2, L3		Significance of the study of evolution of settlements; Cosmological and other influences, origins and growth of cities, effects of		CO1, CO2	PPT Digi Class/ Chalk -Board	

			cultural influence on physical form; Evolution of Planning thought from ancient texts and treatise in India (Vedic Literature), Classification of settlements and plans of ancient Indian villages and towns. Planning Characteristics in Indus valley civilization: Case Studies- Harappa and Mohenjo- Daro, Dolavera,				
2.	L4, L5, L6		Egyptian, Mesopotamian Greek and Roman Civilizations, BC period Towns in India, Silk Route Cities: Vaishali, Bhaghalpur, etc. Medieval Town Planning in India; Town planning in ancient Deccan, Hyosalas, Vijaya nagara dynasties in town planning. Examples of Sri Rangam, Kancheepuram, and port town of Poompugar		CO1, CO2	PPT Digi Class/ Chalk -Board	
3.	L7, L8, L9		Influence of Rajputs in Western India and their contribution to planning. Ancient river valley civilizations (Egyptian, Mesopotamian, Indus valley, Gangetic Region, Chinese and South American).		CO2, CO3	PPT Digi Class/ Chalk -Board	
4.	L10, L11, L12		Urban Processes Criteria of location and development of towns in history, Political, economic, technological, social and cultural factors which have shaped settlements through history, Indian city typologies and study of urban growth, decline, renewal in different cities based on function, location etc.,		CO1, CO3	PPT Digi Class/ Chalk -Board	

5.	L13, L14,		Ist Quiz covering Module 1 and part of Module 2		-	-	
6.	L15		Renaissance; Industrial and post-industrial cities; Model and New Town Movements; Town Improvement and City Beautiful Movements, Colonial cities in India and provision of infrastructure.	.	CO2, CO3	PPT Digi Class/ Chalk -Board	
7.	L16, L17, L18		Planning Theories by Ebenezer Howard, Camillo Sitte, Patrick Geddes and Clarence Perry, C.A. Dioxides, Lewis Mumford, F.L. Wright, Le Corbusier and Peter Hall;		CO2, CO3	PPT Digi Class/ Chalk -Board	
8.	L19, L20, L21		City as a living spatial entity; Concepts of landmark, axis, orientation; City form as a living space; City as a political statement: New Delhi, Chandigarh. (Case studies: Chandigarh, Gandhinagar, Bhubaneshwar, Industrial Towns, Amaravati, special Zones (SEZ) etc.).		CO2, CO3	PPT Digi Class/Chalk -Board	
9.	L22, L23, L24		Modernism and Post-Modernist Planning Thought; Neo-Marxist and Neo Liberal perspectives in Planning; Post positivist typology of planning theory, Comprehensive Rational Planning Approaches; Disjointed Incrementalism and Mixed Range Approach, Strategic Spatial Planning, Advocacy and Pluralism, Collaborative and Communicative Planning, New economic geography and city region, Global cities, 15 minute city, Sustainable Cities,		CO2, CO3	PPT Digi Class/ Chalk -Board	

			Healthy City, Resilience City, New Urbanism and Smart Growth Developments.				
10.	L25,		IInd Quiz covering part of Module 2 and Module 3		-		
11.	L26, L27		Post-independence Indian Planning and concept applications. Capital City (an amalgamation -Delhi; Chandigarh, Gandhi Nagar and Bhubaneshwar			PPT Digi Class/ Chalk -Board	
12.	L28, L29, L30		Steel Cities, New Cities: Raipur; New Mumbai, New Okhla Development Authority, Greater Okhla Development Authority, National Urbanisation Policy (1988) and urban direction.		CO2, CO3	PPT Digi Class/ Chalk -Board	
13.	L31, L32, L33		Corridor Urbanisation (DMIC, Eastern Corridor, Quadrilateral and their influence in urban form and direction. Concept of City within City, Expanded Cities, and Census Towns concept. Geography of Gateway city region (High Power Committee, MOHUA).		CO2, CO3	PPT Digi Class/ Chalk -Board	
14.	L34, L35, L36		Assignment Discussion and Presentation		-	PPT Digi Class/ Chalk -Board	

COURSE INFORMATION SHEET

Course Code:	**ARP 26612**
Course Title:	**Principles and Techniques of Planning**
Pre-requisite(s):	None
Co-requisite(s):	None
Credits: 03	L: 3, T: 0, P: 0
Class Schedule per Week:	03
Class:	M. Plan (Urban and Regional)
Semester:	I
Branch:	Architecture and Planning
Name of Teacher:	Dr. Rewati Raman

Course Objectives

This course enables the students:

A.	To understand the various concepts in planning, categories of planning (economic, social and physical) and their integration at various levels–National, State, and Local.
B.	To understand the tools and the process of making a spatial plan from site to regional level and how to implement and monitor a plan at various scales.

Course Outcomes

After the completion of this course, students will be able to:

CO1.	Acquire knowledge about planning tools introduced in India–from land acquisition to TPS, TOD, and Accommodation Reservation.
CO2.	Demonstrate appreciation of the types of data required (qualitative and quantitative) for planning and the various methods used for data collection.
CO3.	Use and interpret spatial and non-spatial data with tools such as GIS, drones, and statistical methods for data acquisition, analysis, mapping, and interpretation.

Syllabus

Module 1: Fundamentals of Planning and Urban Systems
Planning definitions and concepts, scope and need for planning, categories of planning - economic, social, and physical - and their integration at different levels, levels of planning - national, state, and local, towns as physical, social, economic and functional entities, typologies and characteristics of towns, patterns of urbanisation and urban growth, identification of urban problems, issues and planning priorities, and the basic sequence of plan preparation from problem identification to spatial proposal.

Module 2: Statutory Plans, Land Use Planning and Contemporary Planning Tools
Types and hierarchy of statutory and strategic plans - Perspective Plan, Master Plan, Development Plan, Zonal Plan, Project Plans and Schemes, basic concepts of land use planning, land use classification, zoning regulations, development control regulations, delineation of Local Planning Areas, relationship between planning proposals and implementation mechanisms, examples of GIS-based Master Plans, and introduction to contemporary planning instruments and geospatial programmes such as Town Planning Schemes, Transit-Oriented Development, Accommodation Reservation, SVAMITVA and similar rural-urban spatial initiatives.

Module 3: Fundamentals of Regional Planning and Regionalisation
Concepts of regional planning and regional development, aims and objectives of regional planning, classification of regions - formal and functional, techniques of regionalisation and delineation, relationship of regional planning with national development strategies such as Five-Year Plans, typologies of regions - resource regions, agro-regions, ecological regions, industrial corridors, special economic zones, spatial scale of delineation - village, block, district, urban/city, metropolitan region, meso and macro regions, need for delineation of planning areas, dynamic regions and tools for measuring spatial extent, application of administrative boundaries, urban agglomerations, dedicated planning zones, built-up area studies using satellite imagery and drone surveys, structure of urban nodes, hierarchy, nesting, and rank-size relationships.

Module 4: Planning Surveys, Data Sources and Data Collection Methods
Techniques for conducting physical surveys - land use, building use, building density and height, structural conditions, land utilisation, and topography, identification of data requirements for various plan types - urban and regional, survey techniques for different scales, survey formats, attributes, map codes and classification systems, institutional sources - NASA, Google Earth, NRSA, Survey of India, National Informatics Centre, Ministry of Agriculture, Ministry of Forests, sourcing secondary data from government and non-government agencies - Census of India, NSSO, CSO, NFHS, design of survey instruments, methods of socio-economic data collection - questionnaires, interviews, mailed surveys, observer participation, focus groups, use of remote sensing, drones, mobile networks, sensors and smart devices for data collection, and assessment of data quality in terms of reliability and validity.

Module 5: Data Analysis, Mapping, Forecasting and Presentation Techniques
Land suitability analysis, land use classification and coding, density studies - residential and non-residential, population analysis, economic activity mapping, tabulation, editing and classification of data, graphical representation - pie charts, histograms, bar charts, normal, preparation of maps, tables, and diagrams following professional discipline, isolines, choropleths, choro-schematic maps, scalograms, sociograms, flow diagrams, SWOT analysis, threshold and input-output analysis, population forecasting and projection techniques, use of planning standards and benchmarks - URDPFI, RADFPI, SVAMITVA guidelines, spatial representation of planning proposals, data visualisation for planning communication using digital tools and GIS platforms, integrated interpretation of spatial and non-spatial datasets, limitations and interpretation errors in spatial data use.

Textbooks
T1 - Kulshrestha, S.K. (2022). Urban and Regional Planning in India: A Handbook for Professional Practice. Sage Publications, New Delhi.
T2 - Greed, C. (2004). Introducing Planning. Continuum, London.
T3 - Kopardekar, S.H. & Diwan, G.R. (1994). Urban and Regional Planning: Principles, Practice and Law. Kopardekar, Talegaon, Maharashtra.
T4 - Goode, W.J. & Hatt, P.K. (1982). Methods in Social Research. McGraw-Hill Inc., New York.
T5 - Gupta, S.P. (2022). Statistical Methods. Sultan Chand and Sons, New Delhi.

Reference
R1 - Ministry of Urban Affairs & Employment (2014). Urban Development Plans Formulation and Implementation Guidelines. GoI, New Delhi.

R2 - Fainstein, S. (2012). Readings in Planning Theory (3rd ed.). Blackwell Publishing, Oxford.
R3 - Campbell, S. & Fainstein, S. (2003). Readings in Planning Theory (2nd ed.). Blackwell Publishing.
R4 - Freestone, R. (2000). Urban Planning in a Changing World. E&FN SPON, London.
R5 - Ellin, N. (1999). Postmodern Urbanism. Princeton Architectural Press, New York.
R6 - Kulshrestha, S.K. (2006). Dictionary of Urban and Regional Planning. Kalpaz Publications, New Delhi.
R7 - Taherdoost, H. (2022). Data Collection Methods and Tools for Research. Elvedi, Pully.

Gaps in the syllabus (to meet Industry/Profession requirements): Nil

POs met through Gaps in the Syllabus: Nil

Topics beyond syllabus/Advanced topics/Design: Nil

POs met through Topics beyond syllabus/Advanced topics/Design: Nil

Course Delivery Methods

CD	Course Delivery Method
CD1	Lecture by use of boards/LCD projectors/OHP projectors
CD2	Tutorials/Assignments
CD3	Seminars
CD4	Industrial/guest lectures
CD5	Field surveys and demonstrations using GIS/drones/spatial data tools

Course Outcome (CO) Attainment Assessment Tools & Evaluation Procedure
Direct Assessment

Assessment Tool	% Contribution during CO Assessment
Quiz I	10
Quiz II	10
Quiz III	10
End Sem Examination Marks	50
Assignment	10
Seminar	10

Assessment Components

Assessment Component	CO1	CO2	CO3
End Sem Examination Marks	✔	✔	✔
Quiz (3 nos 10 marks each)	✔	✔	✔
Seminar		✔	✔
Assignment		✔	✔

Indirect Assessment

1. Student Feedback on Faculty

2. Student Feedback on Course Outcome

Mapping of Course Outcomes onto Program Outcomes

Course Outcome #	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	2	2	3	2	1
CO 2	3	3	3	2	1	1
CO 3	1	3	3	3	2	3

Mapping Between COs and Course Delivery (CD) Methods

CD	Course Delivery Method	Course Outcome
CD1	Lectures by use of boards/LCD projectors/OHP projectors	CO1, CO2, CO3
CD2	Tutorials/Assignments	CO2, CO3
CD3	Seminars	CO2, CO3
CD4	Industrial/guest lectures	CO3
CD5	Field surveys and demonstrations using GIS/drones/spatial tools	CO3

Lecture-wise Lesson Planning Details

Week No.	Lect. No.	Module No.	Topics to be covered	Textbook / References	COs mapped	Methodology used	Remarks by faculty
1	L1	1	Definitions and concepts of planning; scope and need for planning	T1, T2, T3	CO1	Chalkboard / PPT	
1	L2	1	Categories of planning - economic, social and physical; integration across levels	T1, T2	CO1	Chalkboard / PPT	
1	L3	1	Levels of planning - national, state and local; relationship between policy, planning and implementation	T1, T2, R1	CO1, CO2	Chalkboard / PPT	
2	L4	1	Towns as physical, social, economic and functional entities; urban typologies and characteristics	T1, T2, R1	CO1, CO2	Chalkboard / PPT	
2	L5	1	Patterns of urbanisation and urban growth; identification of problems	T1, R1	CO1, CO2	Chalkboard / PPT	
2	L6	1	Planning issues, priorities and the basic sequence of plan	T1, R1, R6	CO2	Chalkboard / PPT	

			preparation				
3	L7	1	Basic concepts of spatial planning and the transition from problem identification to proposal formulation	T1, R1	CO2	Chalkboard / PPT	
3	L8	2	Hierarchy of plans - Perspective Plan, Master Plan, Development Plan, Zonal Plan, Project Plans	T1, T3, R1	CO2	Chalkboard / PPT	
3	L9	2	Master Plan, Development Plan and Zonal Plan contents; relationship between statutory and strategic plans	T1, T3, R1	CO2	Chalkboard / PPT	
4	L10	2	Land use planning, land use classification and land use coding for plan preparation	T1, R1, R6	CO2, CO3	Chalkboard / PPT	
4	L11	2	Zoning regulations, development control and delineation of Local Planning Areas	T1, T3, R1	CO2	Chalkboard / PPT	
4	L12	2	GIS-based Master Plans and geospatial approaches for urban and rural-urban planning	T1, R1, R7	CO3	PPT / Visual Demo	
5	L13		Quiz I - covering Module 1 and part of Module 2	-	CO1, CO2	Quiz / Written	
5	L14	2	Contemporary planning instruments - Town Planning Schemes, Transit-Oriented Development, Accommodation Reservation and SVAMITVA	T1, R1, R6	CO1, CO3	PPT / Discussion	
5	L15	3	Concepts and objectives of regional planning; classification and typology of regions	T1, T2, R6	CO1	Chalkboard / PPT	
6	L16	3	Formal and functional regions; techniques of regionalisation and delineation	T1, R1, R6	CO2	Chalkboard / PPT	
6	L17	3	Spatial scales of delineation - village, block, district, city, metropolitan, meso and	T1, R1	CO2	Chalkboard / PPT	

			macro regions				
6	L18	3	Administrative boundaries, urban agglomerations and dedicated planning zones; built-up area delineation using satellite imagery and drone surveys	T1, R1, R7	CO2, CO3	PPT / Visual Demo	
7	L19		Quiz II - covering Module 2 and part of Module 3	-	CO2, CO3	Quiz / Written	
7	L20	3	Structure of urban nodes; hierarchy, nesting and rank-size relationships	T1, R6	CO3	Chalkboard / PPT	
7	L21	3	Regional economic activities and relationship with national development strategies	T1, T2, R1	CO3	Chalkboard / PPT	
8	L22	4	Techniques of physical surveys - land use, building use, density, height, structural conditions, land utilisation and topography	T3, T4, R4	CO2	Chalkboard / PPT	
8	L23	4	Survey formats, attributes, classification systems and map codes	T4, R4, R5	CO2	Chalkboard / PPT	
8	L24	4	Data requirements for urban and regional plans; survey techniques for different planning scales	T1, T4, R1	CO2	Chalkboard / PPT	
9	L25	4	Institutional and secondary data sources - Census of India, NSSO, CSO, NFHS, Survey of India, NRSA, NIC and related agencies	T4, R1, R7	CO2	Chalkboard / PPT	
9	L26	4	Design of survey instruments; questionnaire structure, schedules and interview formats	T4, R7	CO2, CO3	Chalkboard / PPT	
9	L27	4	Socio-economic data collection methods - questionnaires,interviews, mailed surveys, observer participation and focus groups	T4, R7	CO2, CO3	Chalkboard / PPT	

10	L28	4	Remote sensing, drones, mobile networks, sensors and smart devices for data acquisition; reliability and validity of data	R1, R6, R7	CO3	PPT / Visual Demo	
10	L29	5	Land suitability analysis, land use classification and coding; residential and non-residential density studies	T5, R1	CO3	Chalkboard / PPT	
10	L30		Quiz III - covering Module 4 and introduction to Module 5	-	CO2, CO3	Quiz / Written	
11	L31	5	Population analysis, economic activity mapping and population forecasting/projection techniques	T5, R1	CO3	Chalkboard / PPT	
11	L32	5	Tabulation, editing, coding and classification of data; graphical representation using pie, bar, histogram and log graphs	T4, T5	CO3	Chalkboard / PPT	
11	L33	5	Preparation and interpretation of maps, tables and diagrams; isolines, choropleths and choro-schematic maps	T5, R7	CO3	Chalkboard / PPT	
12	L34	5	Sociograms, flow diagrams, scalograms, SWOT analysis, threshold analysis and input-output analysis	T5, R7	CO3	Chalkboard / PPT	
12	L35	5	Planning standards and benchmarks - URDPFI, RADPFI and SVAMITVA guidelines; case applications	T1, R1	CO3	Chalkboard / PPT	
13	L36	5	Data visualisation and proposal presentation using GIS tools; integrated interpretation and limitations of data	T1, R6, R7	CO3	PPT / Demo	
13	L37		Comprehensive course revision across all five modules	-	CO1-CO3	Discussion / Recap	
14	-		Seminar presentations (by students)	-	CO2, CO3	Seminar	

COURSE INFORMATION SHEET

Course code: **ARP 26613**
Course title: **Housing and Community Planning**
Pre-requisite(s): None
Co- requisite(s): None
Credits: 02 L: 2 T:0 P:0
Class schedule per week: 2
Class: M. Plan
Semester / Level: I
Branch: Architecture and Planning
Name of Teacher: Dr. Rajan Chandra Sinha

Course Objectives

This course enables the students:

A.	To understand the nature of housing problems, and various programmes and policies initiated to deal with these problems in Indian cities and villages.

Course Outcomes

After the completion of this course, students will be able to:

CO1.	To analyze the existing housing situation in a city.
CO2.	To show familiarity with national housing policies and other related housing provisions.
CO3.	To demonstrate an understanding of the relationships between housing markets, housing standards and incomes
CO4.	To develop knowledge about housing needs for the poor in India
CO5.	To develop knowledge about housing programmes and projects for the poor and their outcomes.

Syllabus

Module 1: Fundamentals of Housing

Definition & concept of Housing, Housing typologies, Form of Housing provision (Plotted, Group Housing, Cooperative, Self Help, Leasehold, Freehold / Condominium, Rental Housing etc.) and Special Housing types (Barrier free, Mobile homes, congregate housing for assisted living, disaster housing, Student & public housing, Guest house, Night shelters, Incremental Housing etc.).Modernist and post-modernist thought; Housing Ideologies: their assumptions related to poverty, housing issues, housing intervention. Housing needs, demand and supply: definition, factors affecting them, theoretical models and dynamics.

Module 2: Land and Housing

Understanding housing as an important land use component of city plan / master plan, considerations for carrying out city level housing studies, projections, land use provisions. Suitability of land for housing, projecting housing requirements, calculating housing shortages, housing allocation.

Module 3: Slums

Understanding the causes of growth of Slums, Squatter settlements & Urban sprawl, Types and generic characteristics of slums, An overview of measures & approaches to slums & squatter settlements.
Land for housing: formal and informal conduits of land supply, land partnership models for affordable housing provision (land pooling and readjustment, land reconstitution, land sharing).

Module 4: Housing Institutions
Role of Institutions in housing generation and upgrading: Housing and Urban Development Corporation, Building Materials Training and Promotion Council, Central Building Research institute; Participatory models and their application in housing; Conducting social audits in housing; Housing and community development schemes; Formal housing finance outreach and the urban poor in India, Role of informal housing finance.

Module 5: Housing Finance and Policies
Housing finance networks and institutions; Community micro-finance institutions; Goals, Objectives & contents of National Housing & Habitat Policy (2007), International agencies in Housing and Community Development, Approach for affordable housing. PMAY (U) 1.0 and PMAY (U) 2.0.

Text books:
T1 – Modak & Ambedkar; Town & Country Planning & Housing
T2 - Bawa R. L., Fernandes B. G.; Design for Living: A Guide for Planning of Residential Neighbourhoods; Galgotia Publishing Company; N. Delhi
T3 - Abrams, C., Housing and town and country planning: Urban land Problems and Policies
T4 - Payne, G. K., Urban Housing in Third World

Reference books:
R1 - Financing of Housing and community Improvement Programmers / United Nation
R2 - Poulose K T(compiled); Reading Material on Housing; Institute of Town Planners, India; New Delhi;
R3 - URDPFI guidelines.
R4 - National Building Code
R5- MoHUA reports and guidelines

Gaps in the syllabus (to meet Industry/Profession requirements) : Nil

POs met through Gaps in the Syllabus : Nil

Topics beyond syllabus/Advanced topics/Design : Nil

POs met through Topics beyond syllabus/Advanced topics/Design : Nil

Course Delivery methods
Lecture by use of boards/LCD projectors/OHP projectors
Tutorials/Assignments
Seminars
Mini projects/Projects
Laboratory experiments/teaching aids

Industrial/guest lectures
Industrial visits/in-plant training
Self- learning such as use of NPTEL materials and internets
Simulation

Course Outcome (CO) Attainment Assessment tools & Evaluation procedure

Direct Assessment

Assessment Tool	% Contribution during CO Assessment
Quiz I	10
Quiz II	10
Quiz III	10
End Sem Examination Marks	50
Assignment	10
Seminar	10

Assessment Components	CO1	CO2	CO3	CO4	CO5
Quiz I	√	√	√	√	√
Quiz II	√	√	√	√	√
Quiz III	√	√	√	√	√
End Sem Examination	√	√	√	√	√
Assignment	√	√	√	√	√
Seminar	√	√	√	√	√

Indirect Assessment –

1. Student Feedback on Faculty
2. Student Feedback on Course Outcome

Mapping between Objectives and Outcomes

Mapping of Course Outcomes onto Program Outcomes

Course Outcome #	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	2	1	2	2	2	1
CO 2	2	-	3	1	3	2
CO 3	3	3	3	2	2	2
CO 4	3	3	3	3	3	3
CO 5	3	3	3	3	3	3

Mapping Between COs and Course Delivery (CD) methods			
CD	**Course Delivery methods**	**Course Outcome**	**Course Delivery Method**
CD1	Lecture by use of boards/LCD projectors/OHP projectors	CO1	CD1 and CD2
CD2	Tutorials/Assignments	CO2	CD1
CD3	Seminars	CO3	CD1 and CD2

CD4	Mini projects/Projects	CO4	CD1, CD2, CD3
CD5	Laboratory experiments/teaching aids	CO5	CD1and CD2
CD6	Industrial/guest lectures		
CD7	Industrial visits/in-plant training		
CD8	Self- learning such as use of NPTEL materials and internet		
CD9	Simulation		

Lecture-wise lesson planning Details.

Week No.	Lect. No.	Ch. No.	Topics to be covered	Text Book / References	COs mapped	Methodology used	Remarks by faculty if any
1	L1	1	Definition & concept of Housing, Housing typologies, Form of Housing provision	T1, R1	1	PPT Digi Class/Chalk-Board	
1	L2	1	Special Housing types. Modernist and post-modernist thought	T1, R1	1	PPT Digi Class/Chalk-Board	
2	L3	1	Housing Ideologies: their assumptions related to poverty, housing issues, housing intervention.	T1, T2 R1, R2	1, 3	PPT Digi Class/Chalk-Board	
2	L4	1	Housing needs, demand and supply: definition, factors affecting them, theoretical models and dynamics	T1, T2 R1, R2	2,3	PPT Digi Class/Chalk-Board	
3	L5	2	Understanding housing as an important land use component of city plan / master plan, considerations for carrying out city level housing studies	T3, R2, R3	1, 2,3	PPT Digi Class/Chalk-Board	
3	L6	2	Suitability of land for housing, projecting housing requirements,	T3, R2, R3	1, 2,3	PPT Digi Class/Chalk-Board	
4	L7	2	projecting housing requirements, calculating housing shortages, housing allocation.	T3, R2, R3	1,3	PPT Digi Class/Chalk-Board	

4	L8	3	Understanding the causes of growth of Slums, Squatter settlements & Urban sprawl,	T4, R2	3,4	PPT Digi Class/Chalk -Board	
5	L9	3	Types and generic characteristics of slums, An overview of measures & approaches to slums & squatter settlements	T4, R2, R3	3,4	PPT Digi Class/Chalk -Board	
5	L10	3	Land for housing: formal and informal conduits of land supply, land partnership models for affordable housing provision (land pooling and readjustment, land reconstitution, land sharing).	T3, R2, R3	3,4	PPT Digi Class/Chalk -Board	
6	L11	4	Role of Institutions in housing generation and upgrading: Housing and Urban Development Corporation, Building Materials Training and Promotion Council, Central Building Research institute	R2, R5	2,5	PPT Digi Class/Chalk -Board	
6	L12	4	Participatory models and their application in housing; Conducting social audits in housing	T1, T2, T3, R5	1, 4,5	PPT Digi Class/Chalk -Board	
7	L13	4	Housing and community development schemes; Formal housing finance outreach and the urban poor in India,	T1, T2, T3, R5	4,5	PPT Digi Class/Chalk -Board	
7	14	4	Role of informal housing finance	R2, R5	4,5	PPT Digi Class/Chalk -Board	
8	L15	4	Housing finance networks and	R2, R5	4,5	PPT Digi Class/Chalk	

			institutions; Community micro-finance institutions			-Board	
8	L16	5	Goals, Objectives & contents of National Housing & Habitat Policy (2007)	R5	2,5	PPT Digi Class/Chalk -Board	
9	L17	5	Goals, Objectives & contents of National Housing & Habitat Policy (2007)	R5	2,5	PPT Digi Class/Chalk -Board	
9	L18	5	International agencies in Housing and Community Development, Approach for affordable housing	R5	2,5	PPT Digi Class/Chalk -Board	
10	L19	5	PMAY (U) 1.0	R5	2,5	PPT Digi Class/Chalk -Board	
10	L20	5	PMAY (U) 2.0	R5	2,5	PPT Digi Class/Chalk -Board	

COURSE INFORMATION SHEET

Course code: **ARP 26614**
Course title: **Infrastructure Planning**
Pre-requisite(s): None
Co- requisite(s): None
Credits: 02 L:2 T:0 P:0
Class schedule per week: 2
Class: M. Plan
Semester / Level: I
Branch: Architecture and Planning
Name of Teacher: Dr. Bimal Chandra Roy

Course Objectives

This course enables the students:

A.	To classify the various urban infrastructures with their significance and importance
B.	To identify the latest technological innovations and their suitability for a particular
C.	To familiarise oneself with the environment and legal aspects of urban infrastructure planning
D.	To synthesise the knowledge and skills acquired, in the design of infrastructure and services related to water supply, storm water management, wastewater management and solid waste management

Course Outcomes

After the completion of this course, students will be able to:

CO1.	To articulate the history and impact of infrastructure development.
CO2.	To classify and evaluate infrastructure systems and their status.
CO3.	To understand technical processes related to water supply and waste management.
CO4.	To apply infrastructure planning principles to urban and regional settings, considering norms and standards.

Syllabus

Module 1: Typology and Significance of Infrastructure
Types of Infrastructure and existing development status: physical, social and economic infrastructure; Urban Infrastructure and Regional infrastructure: water supply, SWM, sewerage, urban transport, regional infrastructure at micro, meso and macro levels: Transport and freight, communication, pipelines, ICT.

Module 2: Infrastructure Planning Process
History of infrastructure: significance of infrastructure and it evolution, origins of different types of infrastructure as water supply, sewerage, transportation via road, rail, air, waterways; Role of national planning process in infrastructure development; Introduction to infrastructure planning: physical, social, economic and digital infrastructure and the norms associated with it

Module 3: Physical Infrastructure

Water supply sources (surface and underground), collection, conveyance, distribution, treatment (sedimentation, coagulation, filtration, disinfection).; Water Quality & Demand: sanitation systems (conservancy, water carriage), disposal (septic tanks, privies), sewerage systems, collection patterns, treatment (screening, sedimentation, activated sludge, sludge treatment); Urban stormwater collection, drainage systems, rainwater harvesting, water reuse/recycling; Solid Waste Management: Generation to disposal (composting, incineration, sanitary landfills); Energy infrastructure and its distribution, Alternative energy sources and carbon reduction energy options.

Module 4: Social Infrastructure
Infrastructure in context of urban and regional settlements: Educational including schools, colleges, technical education etc., Health facilities including dispensaries, health centre, general hospital etc., Socio-Cultural including police, religious places, etc. Recreational including parks, amusement parks, mela grounds, stadiums etc. their hierarchies, provision and location criteria, Norms and standards etc.

Module 5: Economic Infrastructure
Public Distribution System, ports, rail and airport infrastructure, logistic hubs, storage facilities, banking system networks & financial hubs, and digital infrastructure planning; Huge power storage planning, carbon sink areas; Markets at various levels (organized and unorganized).

Textbooks:
T1 - Howard S. Peavy, Environmental Engineering, Tata McGrawhill
T2 - Goodman, A.S. and Hastak, M., "Infrastructure Planning Handbook: Planning Engineering and Economics", New York: ASCE Press.

Reference books:
R1 S. K. Garg, Water Supply Engineering, Khanna Publishers
R2 Arun Kumar Jain, Ashok Kumar Jain, B. C. Punmia, Water Supply Engineering: Environmental Engineering – I, Laxmi Publications
R3 CPHEEO Manual on Sewerage and Sewage Treatment,
R4 Zaini, U. and Mogens, H., "Municipal Wastewater Management in Developing Countries", Elsevier. R5 - Dragan, S., "Sustainable Water Management Solutions for Large Cities", IAHS Publication.
R6 Tchobanoglous, G., "Integrated Solid Waste Management: Engineering Principles and Management Issues", McGraw Hill.
R7 Baum, V., "Energy Planning in Developing Countries", Australian Govt. Publishing
R8 Amani Omer, Telecommunication Management Networks (TMN) Implementation, Lambert Academic Publishers

Gaps in the syllabus (to meet Industry/Profession requirements): Nil

POs met through Gaps in the Syllabus: Nil

Topics beyond syllabus/Advanced topics/Design: Nil

POs met through Topics beyond syllabus/Advanced topics/Design: Nil

Course Delivery methods
Lecture by use of boards/LCD projectors/OHP projectors
Tutorials/Assignments
Seminars
Mini projects/Projects
Laboratory experiments/teaching aids
Industrial/guest lectures
Industrial visits/in-plant training
Self- learning such as use of NPTEL materials and internets
Simulation

Course Outcome (CO) Attainment Assessment tools & Evaluation procedure

Direct Assessment

Assessment Tool	% Contribution during CO Assessment
Quiz I	10
Quiz II	10
Quiz III	10
End Sem Examination Marks	50
Assignment	10
Seminar	10

Assessment Components	CO1	CO2	CO3	CO4
Quiz I	√	√	√	√
Quiz II	√	√	√	√
Quiz III	√	√	√	√
End Sem Examination	√	√	√	√
Assignment	√	√	√	√
Seminar	√	√	√	√

Indirect Assessment –

1. Student Feedback on Faculty
2. Student Feedback on Course Outcome

Mapping between Objectives and Outcomes

Mapping of Course Outcomes onto Program Outcomes

Course Outcome #	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	2	1	1	2	1	2
CO 2	2	2	2	2	2	2
CO 3	2	1	1	1	2	2
CO 4	3	2	3	2	2	3

CD	Course Delivery methods	Course Outcome	Course Delivery Method
CD1	Lecture by use of boards/LCD projectors/OHP projectors	CO1	CD1, CD2, CD3

CD2	Tutorials/Assignments	CO2	CD1, CD2, CD3
CD3	Seminars	CO3	CD1, CD2, CD3
CD4	Mini projects/Projects	CO4	CD1, CD2, CD3
CD5	Laboratory experiments/teaching aids		
CD6	Industrial/guest lectures		
CD7	Industrial visits/in-plant training		
CD8	Self- learning such as use of NPTEL materials and internet		
CD9	Simulation		

Lecture wise Lesson Planning Details.

Week No.	Lect. No.	Ch. No.	Topics to be covered	Textbook /References	COs mapped	Methodology used	Remarks by faculty if any
1	L1	1	Types of Infrastructure and existing development status: physical, social and economic infrastructure	T1, T2	1, 2	PPT Digi Class /Chalk- Board	
1	L2, L3	1	Urban Infrastructure and Regional infrastructure: water supply, SWM, sewerage, urban transport,	T1, R1, R2	1	PPT Digi Class /Chalk-Board	
2	L4	1	Familiarizing CPHEEO Manual and Guidance	R3	1, 3	PPT Digi Class /Chalk-Board	
2	L5, L6	1	Regional infrastructure at micro, meso and macro levels: Transport and freight, communication, pipelines, ICT requirements	T1, R1,	2, 4	PPT Digi Class /Chalk-Board	
3	L7, L8	2	History of infrastructure: significance of infrastructure and it evolution, sewerage, transportation and the norms associated with it at various scales.	T2, R1, R2	2, 4	PPT Digi Class /Chalk-Board	
3	L9	2	origins of different types of infrastructure as water supply,	T1, R1, R2	2, 4	PPT Digi Class /Chalk-Board	
4	L10, L11	2	origins of different types of infrastructure as water supply,	T1, R1, R2	2, 4	PPT Digi Class /Chalk-Board	

4	L12	2	sewerage, transportation via road, rail, air, waterways;,	T1, R1, R2	2, 4	PPT Digi Class /Chalk-Board	
5	L13, L14	2	sewerage, transportation via road, rail, air, waterways;	T1, R1, R2	2, 4	PPT Digi Class /Chalk-Board	
5	L15,	2	sewerage, transportation via road, rail, air, waterways;	T1, R5	2, 4	PPT Digi Class /Chalk- Board	
6	L16, L17	3	Water supply sources (surface and underground), collection, conveyance, distribution, treatment (sedimentation, coagulation, filtration, disinfection).;	T1, R4, R2	2, 4	PPT Digi Class /Chalk- Board	
7	L18, L19	3	Water Quality & Demand: sanitation systems (conservancy, water carriage), disposal (septic tanks, privies),	T1, R2,R 4,5,	3, 4	PPT Digi Class /Chalk- Board	
7	L20	3	collection patterns, treatment (screening, sedimentation, activated sludge, sludge treatment)	T1, R2,R 4,5	3, 4	PPT Digi Class /Chalk- Board	
8	L21, L22	3	Urban storm water collection, drainage systems, rainwater harvesting, water reuse/recycling	T1, R2,R 4, R5	2, 3, 4	PPT Digi Class /Chalk- Board	
8	L23	3	Solid Waste Management: Generation to disposal (composting, incineration, sanitary landfills);	T1, R2,R 4,5	2, 3, 4	PPT Digi Class /Chalk- Board	
9	L24, L25	3	Energy infrastructure and its distribution, Alternative energy sources and carbon reduction energy options.	T1, R2,R 4,5	2, 3, 4	PPT Digi Class /Chalk- Board	
9	L26	4	Infrastructure in context of urban and regional settlements: Educational including schools, colleges, technical education etc	T1, R2,R 4,5	2, 4	PPT Digi Class /Chalk- Board	

10	L27, L28	4	Health facilities including dispensaries, health centre, general hospital etc	T1, R2,R 4,	2, 3	PPT Digi Class /Chalk-Board	
11	L29, L30	4	Socio-Cultural including police, religious places, etc.	T1, R6	2, 3, 4	PPT Digi Class /Chalk-Board	
11	L31	4	Recreational including parks, amusement parks, mela grounds, stadiums etc. their hierarchies, provision and location criteria, Norms and standards etc	T1, R6	2, 3, 4	PPT Digi Class /Chalk- Board	
12	L32, L33	4	Recreational including parks, amusement parks, mela grounds, stadiums etc. their hierarchies, provision and location criteria, Norms and standards etc	T1, R6	2, 3, 4	PPT Digi Class /Chalk- Board	
12	L34	5	Public Distribution System, ports, rail and airport infrastructure.	T1, R6	2, 3, 4	PPT Digi Class /Chalk-Board	
13	L35	5	logistic hubs, storage facilities, banking system networks & financial hubs	T2, R7, R8	2, 3, 4	PPT Digi Class /Chalk-Board	
13	L36, L37	5	financial hubs, and digital infrastructure planning	T2, R7, R8	3, 4	PPT Digi Class /Chalk- Board	
14	L38, L39	5	Huge power storage planning, carbon sink areas; Markets at various levels (organized and unorganized).	T2, R7, R8	3, 4	PPT Digi Class /Chalk- Board	

COURSE INFORMATION SHEET

Course code: **ARP 26615**
Course title: **Transport Planning**
Pre-requisite(s): None
Co- requisite(s): None
Credits: 02 L: 2 T: 0 P: 0
Class schedule per week: 02
Class: M. Plan
Semester / Level: 1
Branch: Architecture & Planning
Name of Teacher: Dr. Prashant Prasad

Course Objectives

This course enables the students:

A.	To understand fundamental concepts, processes, and the importance of transportation planning.
B.	To develop competence in traffic data collection, surveys, and interpretation.
C.	To understand travel demand modelling and transport system analysis.
D.	To appreciate the design, operations, management, and evaluation of the transport system.
E.	To understand land use–transport integration, smart growth, and TOD for sustainable urban development.

Course Outcomes

After the completion of this course, students will be able to:

CO1.	Understand and apply core concepts of transportation planning.
CO2.	Design and conduct traffic surveys and analyse transport data.
CO3.	Apply travel demand models and traffic engineering principles.
CO4.	Evaluate transport systems in terms of operations, impacts, and economics.
CO5.	Integrate land use planning with transport systems using smart growth and TOD principles.

Syllabus

Module 1: Introduction to Transport Planning and Road Systems
Introduction to transportation planning: history, concept, scope, objectives, and importance; Transport planning in urban and regional development; Classification of roads: functional and administrative; Road network planning and hierarchy; Road geometries and components: carriageway, ROW, intersections, medians, shoulders; Introduction to transport planning process

Module 2: Traffic Data, Surveys, and Transport System Inventory
Types of traffic data: traffic volume, origin–destination, spot speed, speed and delay; Parking characteristics and pedestrian issues; Study area definition and purpose of transport surveys; Overview of survey types and methodologies; Household (Home Interview) survey; Roadside interview, cordon line, postcard questionnaire, and registration number surveys; Commercial vehicle, intermediate public transport, and public transport surveys; Volume count, OD,

parking, and public transport surveys; Transport facility inventory; Survey sampling techniques, travel survey process; Data processing, analysis, and interpretation

Module 3: Travel Demand Modelling and Traffic Engineering Applications
Introduction and overview of travel demand modelling; Transport planning process and model structure; Trip generation: concept; Trip attraction modelling; Trip distribution: data requirements and growth factor methods; Mode choice modelling: influencing factors; Trip assignment: route assignment concepts; Traffic control systems: traffic signals and signal design; Webster's method, shockwaves; Traffic management schemes, rotary design, Vogel's method

Module 4: Transport Systems, Operations, Impacts, and Evaluation
Public transport systems: introduction and classification; Transit capacity, technology, and operations; Performance indicators of public transport systems; Review of Indian urban traffic and transport schemes; Traffic noise, air pollution, and environmental impacts; Road safety: accident reporting, analysis, and safety factors; Introduction to Road Safety Audit (RSA); Highway landscape and street lighting: design considerations; Economic evaluation of transport projects: pricing, funding mechanisms; Cost–benefit analysis, value of time, and project appraisal; Intelligent Transport Systems (ITS): concepts, components, and applications; Sustainable transport planning principles

Module 5: Land Use Planning and Transport Integration
Relationship between land use and transportation systems; Land use–transport interaction and integration concepts; Land use models: concept and applications; Lowry Model: structure, assumptions, and application; Smart growth principles and land use–transport integration; Case cities and best practices of integrated planning; Transit-Oriented Development (TOD): concepts, principles, norms, and standards; Role of TOD in corridor development and spatial restructuring;
Institutional and policy frameworks supporting integration; Indian and international case studies of transport–land use integration

Text books:

1. Kadiyali, L. R. (2014). Traffic Engineering and Transport Planning. Khanna Publishers, New Delhi.
2. Vuchic, V. R. (2005). Urban Transit: Operations, Planning & Economics. John Wiley & Sons.
3. O'Flaherty Coleman A. (1997). Transport Planning and Traffic Engineering. CRC Press, Taylor and Francis Group.
4. Mitchell, R. B. & Rapkin, C. (1954). Urban Traffic: A Function of Land Use. Columbia University Press.
5. Rodrigue, J.-P., Comtois, C., & Slack, B. (2006). The Geography of Transport Systems. Routledge.

Reference books:

1. Ministry of Housing and Urban Affairs (2017). National Transit Oriented Development Policy. Government of India.
2. Tumlin, J. (2012). Sustainable Transportation Planning. Wiley.
3. Cao, X. J., Ding, C., & Yang, J. (2022). Urban Transport and Land Use Planning. Academic Press.

4. Asian Development Bank (2022). Transit-Oriented Development and Land Value Capture in India. ADB, Manila.
5. Schoeman, C. B. (2015). Land Use Management and Transportation Planning. WIT Press.
6. João de Abreu e Silva (2023). Handbook on Transport and Land Use. Edward Elgar Publishing.

Gaps in the syllabus (to meet Industry/Profession requirements): Nil

POs met through Gaps in the Syllabus: Nil

Topics beyond syllabus/Advanced topics/Design: Nil

POs met through Topics beyond syllabus/Advanced topics/Design: Nil

Course Delivery methods
Lecture by use of boards/LCD projectors/OHP projectors
Tutorials/Assignments
Seminars
Mini projects/Projects
Laboratory experiments/teaching aids
Industrial/guest lectures
Industrial visits/in-plant training
Self- learning such as use of NPTEL materials and internets
Simulation

Course Outcome (CO) Attainment Assessment tools & Evaluation procedure

Direct Assessment

Assessment Tool	**% Contribution during CO Assessment**
Quiz I	10
Quiz II	10
Quiz III	10
End Sem Examination Marks	50
Assignment	10
Seminar	10

Assessment Components	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**
Mid Sem Examination Marks	√	√	√	√	√
End Sem Examination Marks	√	√	√	√	√
Assignment	√	√	√	√	√

Indirect Assessment –

1. Student Feedback on Faculty
2. Student Feedback on Course Outcome

Mapping between Objectives and Outcomes

Mapping of Course Outcomes onto Program Outcomes

Course Outcome #	Program Outcomes					
	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	2	1	1	1	2
CO 2	2	3	1	3	1	2
CO 3	3	3	2	3	1	2
CO 4	3	2	3	2	2	2
CO 5	3	2	3	2	3	2

Mapping Between COs and Course Delivery (CD) methods			
CD	Course Delivery methods	Course Outcome	Course Delivery Method
CD1	Lecture by use of boards/LCD projectors/OHP projectors	CO1	CD1
CD2	Tutorials/Assignments	CO2	CD1
CD3	Seminars	CO3	CD1 and CD2
CD4	Mini projects/Projects		
CD5	Laboratory experiments/teaching aids		
CD6	Industrial/guest lectures		
CD7	Industrial visits/in-plant training		
CD8	Self- learning such as use of NPTEL materials and internet		
CD9	Simulation		

Lecture wise Lesson planning Details.

Week No.	Lect. No.	Module. No.	Topics to be covered	Text Book / References	COs mapped	Methodology used	Remarks by faculty if any
1	L1	1	Introduction to transportation planning: history, concept, scope, objectives, and importance	T1	1	PPT Digi Class/Chalk-Board	
1	L2	1	Transport planning in urban and regional development	T1	1	PPT Digi Class/Chalk-Board	
2	L3	1	Classification of roads: functional and administrative	T1	1	PPT Digi Class/Chalk-Board	
2	L4	1	Road network planning and hierarchy	T1	1	PPT Digi Class/Chalk-	

						Board	
3	L5	1	Road geometries and components: carriageway, ROW	T1	1	PPT Digi Class/Chalk-Board	
3	L6	1	intersections, medians, shoulders; Introduction to transport planning process	T1	1	PPT Digi Class/Chalk-Board	
4	L7	2	Types of traffic data: traffic volume, origin–destination, spot speed, speed and delay	T1	2	PPT Digi Class/Chalk-Board	
4	L8	2	Parking characteristics and pedestrian issues; Study area definition and purpose of transport surveys	T1	2	PPT Digi Class/Chalk-Board	
5	L9	2	Overview of survey types and methodologies; Household (Home Interview) survey; Roadside interview, cordon line, postcard questionnaire, and registration number surveys; Commercial vehicle, intermediate public transport, and public transport surveys;	T1	2	PPT Digi Class/Chalk-Board	
5	L10	2	Volume count, OD, parking, and public transport surveys;	T1	2	PPT Digi Class/Chalk-Board	
6	L11	2	Transport facility inventory; Survey sampling techniques, travel survey process;	T1	2	PPT Digi Class/Chalk-Board	
6	L12	2	Data processing, analysis, and interpretation	T1	2	PPT Digi Class/Chalk-Board	
7	L13	3	Introduction and overview of travel demand modelling; Transport planning process and model structure	T1	3	PPT Digi Class/Chalk-Board	
7	L14	3	Trip generation: concept; Trip attraction modelling	T1	3	PPT Digi Class/Chalk-Board	

8	L15	3	Trip distribution: data requirements and growth factor methods;	T1	3	PPT Digi Class/Chalk-Board	
8	L16	3	Mode choice modeling: influencing factors; Trip assignment: route assignment concepts;	T1	3	PPT Digi Class/Chalk-Board	
9	L17	3	Traffic control systems: traffic signals and signal design; Webster's method, shockwaves;	T1	3	PPT Digi Class/Chalk-Board	
9	L18	3	Traffic management schemes, rotary design, Vogel's method	T1	3	PPT Digi Class/Chalk-Board	
10	L19	4	Public transport systems: introduction and classification; Transit capacity, technology, and operations; Performance indicators of public transport systems	T1, T3	4	PPT Digi Class/Chalk-Board	
10	L20	4	Review of Indian urban traffic and transport schemes; Traffic noise, air pollution, and environmental impacts	T1, T3	4	PPT Digi Class/Chalk-Board	
11	L21	4	Road safety: accident reporting, analysis, and safety factors; Introduction to Road Safety Audit (RSA)	T1, T3	4	PPT Digi Class/Chalk-Board	
11	L22	4	Highway landscape and street lighting: design considerations; Economic evaluation of transport projects: pricing, funding mechanisms; Cost–benefit analysis,	T1, T3	4	PPT Digi Class/Chalk-Board	
12	L23	4	value of time, and project appraisal;	T1, T3	4	PPT Digi Class/Chalk-Board	
12	L24	4	Intelligent Transport Systems (ITS): concepts, components, and applications; Sustainable transport	T1, T3	4	PPT Digi Class/Chalk-Board	

			planning principles				
13	L25	5	Relationship between land use and transportation systems; Land use–transport interaction and integration concepts	T3, T2	5	PPT Digi Class/Chalk-Board	
13	L26	5	Land use models: concept and applications; Lowry Model: structure, assumptions, and application	T3, T2	5	PPT Digi Class/Chalk-Board	
14	L27	5	Smart growth principles and land use–transport integration; Case cities and best practices of integrated planning	T3, T2	5	PPT Digi Class/Chalk-Board	
14	L28	5	Transit-Oriented Development (TOD): concepts, principles, norms, and standards; Role of TOD in corridor development and spatial restructuring	T3, T2, R1	5	PPT Digi Class/Chalk-Board	
15	L29	5	Institutional and policy frameworks supporting integration	T3, T2	5	PPT Digi Class/Chalk-Board	
15	L30	5	Indian and international case studies of transport–land use integration	T3, T2	5	PPT Digi Class/Chalk-Board	

COURSE INFORMATION SHEET

Course code: **ARP 26616**
Course title: **Environmental Studies and Planning**
Pre-requisite(s): None
Co- requisite(s): None
Credits: 02 L:2 T:0 P:0
Class schedule per week: 02
Class: M.Plan
Semester / Level: I
Branch: Architecture and Planning
Name of Teacher: Dr. Tiwari Pavan Kumar

Course Objectives

This course enables the students:

A.	To understand the components of the urban environment and potential threats and complexities involved in conserving them.
B.	To be aware of best practices in urban planning related to urban environmental planning.
C.	To explain the principles and strategies for natural resource conservation, management and associated conflicts.
D.	To understand the impact of climate change and related challenges in an urban setting.

Course Outcomes

After the completion of this course, students will be able to:

CO1.	To gain a wider understanding of urban ecological and environmental issues and to appreciate potential approaches for cities to deal with ecological and environmental challenges and threats.
CO2.	To develop an understanding of the mandates of the global and national urban environment.
CO3.	To connect urban sustainability concepts and technology to actual urban planning challenges faced.
CO4.	To analyse the environmental pollution indicators and limits for urban centres in India.

Syllabus

Module 1: Environment and Ecosystems:
Environment and its components; concept of ecosystems; structure and functions; food, energy, and ecology; ecological pyramid; ecological systems at the urban and regional scales; ecological services.

Module 2: Environmental Principles in Planning
Concepts and relevance of environmental planning, objectives of environmental planning and design, sustainability, environmental criteria and ecological parameters for planning at different levels: site planning, settlement planning and regional planning, Carrying Capacity Based Planning, Models and Case Studies in Urban and Regional Development.

Module 3: Environmental Legislation, Policies and Practices:
International Environmental Policies and initiatives, including policies, strategies, protocols, treaties, and agreements; Overview of the Government of India's Environmental policies. Global Efforts for Sustainable Urban Development.

Module 4: Concept of Sustainable Urban Development:
Problems of urbanisation. Informality in Indian urbanisation. Climate change and its effect on global urbanisation. Climate-resilient cities. Global best practices, case studies.

Module 5: Low-Carbon Infrastructure for Cities:
Resource use in urban areas: Water, waste, energy conservation, Appropriate infrastructural systems to ensure a healthy water supply, sanitation, and waste disposal. Low-carbon infrastructure development, opportunities, challenges and strategies.

Textbooks:
T1 - McHarg, Ian L., 1920-2001. (1969). Design with nature. Garden City, N.Y., Published for the American Museum of Natural History [by] the Natural History Press.
T2 - Westman W., Ecology, Impact Assessment and Environmental Planning, John Wiley and Sons
T3 - James K. Lein, Integrated Environmental Planning, Blackwell Publishing.

Reference books:
R1 - Michael Hough, Cities and Natural Process: A Basis for Sustainability,
R2 - AITP Reader on Ecology & Resource Development, AITP
R3 - Prof A. K. Maitra, AITP Reading Material on Environmental Planning and Design, SPA Delhi
R4 - Bahuguna, S., Natraj, Environment Crisis and Sustainable Development, Dehradun,
R5 - Wheeler, S.M., and T. Beatley, eds. 2008. Sustainable Urban Development reader, 2nd ed. New York: Routledge. R6 - Bell, S., & S. Morse.199. Sustainability Indicators: Measuring the Immeasurable. London: Earthscan. (pp.9-32)
R7 - Campbell Scot, "Green Cities, Growing Cities and Just Cities: Urban Planning and the Contradictions of Sustainable Development", Journal of American Planning Association 62:3, 296-312, 1996. R6 - Bajpai, Jitendra N., "Building a foundation for smart Indian cities," published in "Insight", a Journal of Indian School of Business, Hyderabad, April 2015.
R8 - Kennedy, C., Ibrahim, N. & Hoorn Weg, D. Low-carbon infrastructure strategies for cities. *Nature Clim Change* **4**, 343–346 (2014). https://doi.org/10.1038/nclimate2160

Gaps in the syllabus (to meet Industry/Profession requirements): Nil

POs met through Gaps in the Syllabus: NA

Topics beyond syllabus/Advanced topics/Design: Nil

POs met through Topics beyond syllabus/Advanced topics/Design: NA

Course Delivery methods
Lecture by use of boards/LCD projectors/OHP projectors

Tutorials/Assignments
Seminars
Mini projects/Projects
Laboratory experiments/teaching aids
Industrial/guest lectures
Industrial visits/in-plant training
Self- learning such as use of NPTEL materials and internets
Simulation

Course Outcome (CO) Attainment Assessment tools & Evaluation procedure

Direct Assessment

Assessment Tool	**% Contribution during CO Assessment**
Quiz I	10
Quiz II	10
Quiz III	10
End Sem Examination Marks	50
Assignment	10
Seminar	10

Assessment Components	**CO1**	**CO2**	**CO3**	**CO4**
Quiz I	√	√	√	√
Quiz II	√	√	√	√
Quiz III	√	√	√	√
End Sem Examination	√	√	√	√
Assignment	√	√	√	√

Indirect Assessment –

1. Student Feedback on Faculty
2. Student Feedback on Course Outcome

Mapping between Objectives and Outcomes

Mapping of Course Outcomes onto Program Outcomes

Course Outcome #	**Program Outcomes**					
	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	3	3	2	3	1
CO 2	2	2	3	2	3	2
CO 3	3	3	2	2	2	1
CO 4	2	2	2	1	2	1

CD	Course Delivery methods	Course Outcome	Course Delivery Method
CD1	Lecture by use of boards/LCD projectors/OHP projectors	CO1 CO2 CO3 CO4	CD1 CD2 CD3 CD4
CD2	Tutorials/Assignments	CO1 CO2 CO3 CO4	CD1 CD7 CD8
CD3	Seminars	CO1 CO2 CO3 CO4	CD1 CD7 CD8
CD4	Mini projects/Projects		
CD5	Laboratory experiments/teaching aids		
CD6	Industrial/guest lectures		
CD7	Industrial visits/in-plant training		
CD8	Self- learning such as use of NPTEL materials and internets		
CD9	Simulation		

Lecture-wise Lesson planning Details.

Week No.	Lect. No.	Topics to be covered	Text Book / References	COs mapped	Methodology used	Remarks by faculty
1	L1-L3	Environment and its components; concept of ecosystems	T1, R2, R3	1, 2	PPT Digi Class/Chalk -Board	
2	L4-L6	Structure and functions; food, energy, and ecology; ecological pyramid;	T1, R2, R3	1, 2	PPT Digi Class/Chalk -Board	
3	L7-L9	Ecological systems at the urban and regional scales; ecological services.	T2, R4, R5	1, 2	PPT Digi Class/Chalk -Board	
4	L10-L12	Concepts and relevance of Environmental Planning, Objectives of environmental planning and design, Sustainability. Eco-city concepts.	T2, R4, R5	1, 2	PPT Digi Class/Chalk -Board	
5	L13-L15	Environmental criteria and ecological parameters for planning at different levels. Carrying Capacity, Models and Case Studies.	T2, R4, R5	2,3	PPT Digi Class/Chalk -Board	
6	L16-L18	International Environmental Policies	T2, R4, R5	2,3	PPT Digi Class/Chalk	

		and initiatives, protocols, treaties, and agreements;			-Board	
7	L19-L21	Overview of India's Environmental policies. Global Efforts.	T2, R5, R8	2,3	PPT Digi Class/Chalk -Board	
8	L22-L24	Problems of urbanisation. Climate change and its effect on global urbanisation.	T2, R5, R8	2,3	PPT Digi Class/Chalk -Board	
9	L25-L27	Climate-resilient cities. Global best practices, case studies.	T2, R6, R7	3,4	PPT Digi Class/Chalk -Board	
10	L28-L30	Resource use in urban areas: Water, waste, energy conservation.	T2, R6, R7	3,4	PPT Digi Class/Chalk -Board	
11	L31-L33	Low-carbon infrastructure development, opportunities, challenges and strategies.		1,2,3,4	PPT Digi Class/Chalk -Board	
12	L34-L36	Low-carbon infrastructure development, opportunities, challenges and strategies.		1,2,3,4	PPT Digi Class/Chalk -Board	
13	L37-L39	Revision, Assignment and seminar presentation				
14		Revision, Assignment and seminar presentation				

COURSE INFORMATION SHEET

Course code: **ARP 26617**
Course title: **Urban Design**
Pre-requisite(s): None
Co- requisite(s): None
Credits: 02 L: 2 T:0 P:0
Class schedule per week: 02
Class: M. Plan
Semester / Level: I
Branch: Architecture and Planning
Name of Teacher: Dr. Shama Parween

Course Objectives

This course enables the students:

A.	To develop a conceptual understanding of urban design across various urban scales.
B.	To engage students in a holistic and effective urban design process.
C.	To enable the application of relevant urban design techniques, incorporating legal and regulatory frameworks.

Course Outcomes

After the completion of this course, students will be able to:

CO1.	Analyse and interpret urban form and spatial relationships at multiple scales.
CO2.	Demonstrate an understanding of urban design principles in the development of conceptual and contextual design proposals.
CO3.	Develop integrated urban design solutions through a holistic, participatory approach.
CO4.	Apply advanced urban design tools and techniques, including mapping, modelling, and simulation.
CO5.	Incorporate planning and legal frameworks in urban design proposals.

Syllabus

Module 1: Site Appraisal & Urban Context Analysis
Orientation and introduction to urban design; Selection of site (local precinct or urban sector); Site inventory and documentation: land use, circulation, built form, activity; Mapping tools: base map preparation, overlays, SWOT analysis.
Module 2: Urban Morphology & Design Parameters
Study of urban form, building typologies, street sections, open space networks; Edge conditions, transition zones, and interface studies; Deriving design parameters: scale, proportion, density, permeability

Module 3: Conceptual Development & Visioning

Vision statement and urban design goals; Concept generation (zoning, movement, activity distribution); Urban design strategies: connectivity, mixed-use, placemaking, sustainability

Module 4: Urban Design Proposal & Detailing

Detailed design of selected precincts/zones; Design of public spaces, edge treatments, landmarks, mobility corridors; Streetscape design, furniture, lighting, landscape elements; Integration of urban design guidelines and planning controls

Module 5: Legal Frameworks, Presentation & Review

Development controls, zoning bylaws, UD guidelines (city-specific); Integration of legal tools; Final documentation and presentation

Textbooks:

1. Carmona, M., Heath, T., Oc, T., & Tiesdell, S. (2010). *Public places, urban spaces: The dimensions of urban design* (2nd ed.). Routledge.
2. Lang, J. (2005). *Urban design: A typology of procedures and products*. Routledge.
3. Lynch, K. (1960). *The image of the city*. MIT Press.
4. Gehl, J. (2011). *Life between buildings: Using public space*. Island Press.
5. Trancik, R. (1986). *Finding lost space: Theories of urban design*. Wiley.
6. UN-Habitat Urban Design Compendium
7. Urban Design Group Manual (UK)
8. National Urban Design Guidelines (India) – Ministry of Housing & Urban Affairs (MoHUA)

Reference books:

1. Alexander, C., Ishikawa, S., & Silverstein, M. (1977). *A pattern language: Towns, buildings, construction*. Oxford University Press.
2. Barnett, J. (2003). *Redesigning cities: Principles, practice, implementation*. Planners Press.
3. Cullen, G. (1961). *The concise townscape*. Architectural Press.
4. Moughtin, C. (2003). *Urban design: Street and square* (3rd ed.). Routledge.
5. American Planning Association. (2006). *Planning and urban design standards*. Wiley.

Gaps in the syllabus (to meet Industry/Profession requirements) : Field-based application has been introduced in the revised syllabus

Gaps in the syllabus (to meet Industry/Profession requirements): Nil

POs met through Gaps in the Syllabus: Nil

Topics beyond syllabus/Advanced topics/Design: Nil

POs met through Topics beyond syllabus/Advanced topics/Design: Nil

Course Delivery methods
Lecture by use of boards/LCD projectors/OHP projectors
Tutorials/Assignments
Seminars
Mini projects/Projects

Laboratory experiments/teaching aids
Industrial/guest lectures
Industrial visits/in-plant training
Self- learning such as use of NPTEL materials and internets
Simulation

Course Outcome (CO) Attainment Assessment tools & Evaluation procedure

Direct Assessment

Assessment Tool	% Contribution during CO Assessment
Quiz I	10
Quiz II	10
Quiz III	10
End Sem Examination Marks	50
Assignment	10
Seminar	10

Assessment Components	CO1	CO2	CO3	CO4	CO5
Quiz I	✓	✓	✓	✓	✓
Quiz II	✓	✓	✓	✓	✓
Quiz III	✓	✓	✓	✓	✓
End Sem Examination	✓	✓	✓	✓	✓
Assignment	✓	✓	✓	✓	✓
Seminar	✓	✓	✓	✓	✓

Indirect Assessment –

1. Student Feedback on Faculty
2. Student Feedback on Course Outcome

Mapping between Objectives and Outcomes

Mapping of Course Outcomes onto Program Outcomes

Course Outcome #	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	1	1	3	2	1
CO 2	1	3	2	1	1	1
CO 3	1	1	1	3	3	1
CO 4	1	1	3	1	1	3
CO 5	1	1	3	1	3	1

Mapping Between COs and Course Delivery (CD) methods			
CD	Course Delivery methods	Course Outcome	Course Delivery Method
CD1	Lecture by use of boards/LCD projectors/OHP projectors	CO1 and CO2	
CD2	Tutorials/Assignments	CO1, CO2, CO3, CO4 and CO5	

CD3	Seminars	NA	
CD4	Mini projects/Projects	CO1, CO2, CO3, CO4 and CO5	
CD5	Laboratory experiments/teaching aids	NA	
CD6	Industrial/guest lectures	NA	
CD7	Industrial visits/in-plant training	NA	
CD8	Self- learning such as use of NPTEL materials and internet	CO1, CO2, CO5	
CD9	Simulation	CO4	

Lecture wise Lesson planning Details.

Week No.	Lect. No.	Ch. No.	Topics to be covered	Text Book / References	COs mapped	Methodology used	Remarks by faculty if any
1	L1	1	Orientation and introduction to urban design	T1, R1	1, 2	PPT Digi Class/Chalk -Board	
2	L2	1	Orientation and introduction to urban design, Selection of site		1,2	PPT Digi Class/Chalk -Board	
3	L3	1	Site inventory and documentation; land use, circulation, built form, activity		2,4	PPT Digi Class/Chalk -Board	
4	L4	1	Mapping tools: base map preparation, overlays		2,4	PPT Digi Class/Chalk -Board	
5	L5	1	SWOT analysis		3	PPT Digi Class/Chalk -Board	
6	L6	2	Study of urban form, building typologies		1,2	PPT Digi Class/Chalk -Board	
7	L7	2	street sections, open space networks		1,2,4	PPT Digi Class/Chalk -Board	
8	L8	2	Edge conditions, transition zones, and interface studies		1,2	PPT Digi Class/Chalk -Board	
9	L9	2	Deriving design parameters: scale, proportion, density, permeability		1,2,4	PPT Digi Class/Chalk -Board	
10	L10	3	Vision statement and urban design goals		3	PPT Digi Class/Chalk -Board	

11	L11	3	Concept generation (zoning, movement, activity distribution)		3	PPT Digi Class/Chalk -Board	
12	L12	3	Urban design strategies: connectivity, mixed-use		1,2,5	PPT Digi Class/Chalk -Board	
13	L13	3	placemaking, sustainability		1,2,5	PPT Digi Class/Chalk -Board	
14	L14	4	Detailed design of selected precincts/zones; Design of public spaces		3,4	PPT Digi Class/Chalk -Board	
15	L15	4	edge treatments, landmarks, mobility corridors		3,4	PPT Digi Class/Chalk -Board	
16	L16	4	Streetscape design, furniture, lighting, landscape elements		3,4	PPT Digi Class/Chalk -Board	
17	L17	4	Integration of urban design guidelines and planning controls		3,5	PPT Digi Class/Chalk -Board	
18	L18	5	Development controls, zoning bylaws		5	PPT Digi Class/Chalk -Board	
19	L19	5	UD guidelines (city-specific); Integration of legal tools		5	PPT Digi Class/Chalk -Board	
20	L20	5	Final documentation and presentation		1,2,3,4, 5	PPT Digi Class/Chalk -Board	

COURSE INFORMATION SHEET

Course code: **ARP 26618**
Course title: **Urban Regeneration & Conservation**
Pre-requisite(s): None
Co- requisite(s): None
Credits: 02 L: 2 T:0 P:0
Class schedule per week: 02
Class: M. Plan
Semester / Level: I
Branch: Architecture and Planning
Name of Teacher: Dr. Rizwan Kazmi

Course Objectives

This course enables the students:

A.	To understand the history, principles, and basic concepts of conserving historic buildings and heritage areas within the context of urban regeneration.
B.	To learn methods and tools for recording, documenting, and preparing inventories of historic urban precincts.
C.	To develop professional-level skills in conservation and regeneration using various techniques.
D.	To understand the economic, social, and organisational factors that influence conservation and urban regeneration projects.

Course Outcomes

After the completion of this course, students will be able to:

CO1.	Understand the evolution of conservation philosophy and ethics, along with the legislation and policies that protect the historic environment and support urban regeneration.
CO2.	Develop the ability to survey, document, and analyse historic urban precincts by examining their various layers of significance within the broader context of urban regeneration.
CO3.	Acquire knowledge of practical methods and techniques used for the conservation of historic urban areas as part of sustainable urban regeneration initiatives.

Syllabus

Module 1:
Meaning and importance of urban conservation. Urban heritage: tangible and intangible aspects. Identification, inventory, and mapping of urban heritage resources. Early examples of urban conservation. Integration of urban conservation with the urban planning process. Interdisciplinary approaches and methods used in urban conservation.

Module 2:

Meaning and concept of urban regeneration. Scope and importance of urban regeneration in cities. Need for urban regeneration: urban decline, population pressure, cities' carrying capacity, and the unequal distribution of resources. Principles of urban regeneration. Key values of urban regeneration: improving physical infrastructure, safety and comfort, inclusivity, and sustainability.

Module 3:
Role of Urban Conservation in Urban Regeneration, Urban Recycling and brown field projects, Adaptive Reuse, and Infill Development. Definitions: Revival, Restoration, Renewal, Restoration, Recycling, Reuse, Rehabilitation, Resettlement, Redevelopment.

Module 4:
Planning procedures- inspection, surveys and investigation techniques; methods for inventory preparation and documentation (Base Map Preparation, Data Collection & Analysis, Issues and Potentials); and preparation of programmes for urban regeneration and conservation.

Module 5:
Urban conservation & regeneration laws and policies- UNESCO World Heritage legislation and charters; national antiquities and monument laws including the Archaeological and Antiquities Act and Treasure Trove Act; provisions in master plans for redevelopment, resettlement, and regeneration projects; and policies and strategies for the revitalisation, redevelopment, recycling, and conservation of historic, traditional, and informal urban areas.

Textbooks:
T1: Sustainable Urban Regeneration (Dean Kevin et al., Routledge).
T2: Alan Dobby, Conservation and Planning, The Built Environment Series, Hutchinson of London,
T3: Introduction to Urban Conservation (the complete book), Ayman G. Abdel Tawab, Lambert Academic Publishing
T4: Urban Heritage Conservation and Sustainable Community Development, Bhatta Kishan Datta
T5: Urban Conservation for Urban Regeneration (Shashikant Nishant Sharma)
T6: Bernard M. Feilden; Guidelines for Conservation; Architectural Press, London.
T7: Robert Pickard; Policy involved in Heritage Conservation.
T8: Nahoum Cohen, Urban Conservation, MIT Press,
T9: Peter Roberts, Peter W. Roberts, Hugh Sykes, Urban Regeneration: A Handbook, SAGE Publications
T10 - Jerome Rothenberg, Economic evaluation of urban renewal: conceptual foundation of benefit-cost analysis, Brookings Institution

Reference books:
R1: Reshaping Urban Conservation (Springer),
R2: Regenerating Urban Land- A Practitioner’s Guide (World Bank Group)
R3: Urban Renewal: Theory and Practice (Springer)
R4: Urban Conservation and Regeneration (Aylin Orbaşlı), Oxford Brookes University
R5: Approaching Regeneration of the Built Environment (Springer)

Gaps in the syllabus (to meet Industry/Profession requirements): Nil

POs met through Gaps in the Syllabus: Nil

Topics beyond syllabus/Advanced topics/Design: Nil

POs met through Topics beyond syllabus/Advanced topics/Design: Nil

Course Delivery methods
Lecture by use of boards/LCD projectors/OHP projectors
Tutorials/Assignments
Seminars
Mini projects/Projects
Laboratory experiments/teaching aids
Industrial/guest lectures
Industrial visits/in-plant training
Self- learning such as use of NPTEL materials and internets
Simulation

Course Outcome (CO) Attainment Assessment tools & Evaluation procedure

Direct Assessment

Assessment Tool	% Contribution during CO Assessment
Quiz I	10
Quiz II	10
Quiz III	10
End Sem Examination Marks	50
Assignment	10

Assessment Components	CO1	CO2	CO3
Quiz I	√	√	√
Quiz II	√	√	√
Quiz III	√	√	√
End Sem Examination	√	√	√
Assignment	√	√	√

Indirect Assessment –

1. Student Feedback on Faculty
2. Student Feedback on Course Outcome

Mapping between Objectives and Outcomes

Mapping of Course Outcomes onto Program Outcomes

Course Outcome #	PO1	PO2	PO3	PO4	PO5	PO6
CO1	1	3	1	1	1	1
CO2	3	3	3	3	3	2
CO3	1	3	3	3	3	2

Mapping Between COs and Course Delivery (CD) methods			
CD	**Course Delivery methods**	**Course Outcome**	**Course Delivery Method**
CD1	Lecture by use of boards/LCD projectors/OHP projectors	CO1	CD1, CD2, CD3
CD2	Tutorials/Assignments	CO2	CD1, CD2, CD3
CD3	Seminars	CO3	CD1, CD2, CD3, CD6
CD4	Mini projects/Projects		
CD5	Laboratory experiments/teaching aids		
CD6	Industrial/guest lectures		
CD7	Industrial visits/in-plant training		
CD8	Self- learning such as use of NPTEL materials and internet		
CD9	Simulation		

Lecture wise Lesson planning Details.

Week No.	Lect. No.	Ch. No.	Topics to be covered	Text Book / References	COs mapped	Methodology used	Remarks by faculty if any
1	L1 & L2	1	Meaning and importance of urban conservation. Urban heritage: tangible and intangible aspects.	T1, R1	1, 2	PPT Digi Class/Chalk -Board	
	L3 & L4	1	Identification, inventory, and mapping of urban heritage resources. Early examples of urban conservation	T1, R1	1,2	PPT Digi Class/Chalk -Board	
	L5 & L6	1	Integration of urban conservation with the urban planning process. Interdisciplinary approaches and methods used in urban conservation.	T1, R1	1,2,3	PPT Digi Class/Chalk -Board	
	L7 & L8	2	Meaning and concept of urban regeneration. Scope and importance of urban regeneration in cities. Need for urban regeneration: urban decline,	T1, T2, & R2	1,2	PPT Digi Class/Chalk -Board	

			population pressure, cities' carrying capacity, and the unequal distribution of resources.				
	L9 & L10	2	Principles of urban regeneration. Key values of urban regeneration: improving physical infrastructure, safety and comfort, inclusivity, and sustainability.	T1, T2, & R2	1,2	PPT Digi Class/Chalk -Board	
	L11 & L12	2	Key values of urban regeneration: improving physical infrastructure, safety and comfort, inclusivity, and sustainability.	T1, T2, & R2	1,2	PPT Digi Class/Chalk -Board	
	L13 & L14	3	Role of Urban Conservation in Urban Regeneration, Urban Recycling and brown field projects, Adaptive Reuse, and Infill Development.	T1, T2, & R2	1,2	PPT Digi Class/Chalk -Board	
	L15 & L16	3	Definitions: Revival, Restoration, Renewal, Restoration, Recycling, Reuse, Rehabilitation, Resettlement, Redevelopment.	T1, T2, & R2	1,2,3	PPT Digi Class/Chalk -Board	
	L17 & L18	4	Planning procedures-inspection, surveys and investigation techniques; methods for inventory preparation and documentation (Base Map Preparation, Data Collection & Analysis, Issues and Potentials)	T1, T2, & R2	1,2,3	PPT Digi Class/Chalk -Board	
	L19 & L20	4	Planning procedures-inspection, surveys and investigation	T1, T2, & R2	1,2,3	PPT Digi Class/Chalk -Board	

			techniques; methods for inventory preparation and documentation (Base Map Preparation, Data Collection & Analysis, Issues and Potentials)				
	L21 & L22	4	Preparation of programmes for urban regeneration and conservation.	T1, T2, R1 & R2	1,2,3	PPT Digi Class/Chalk -Board	
	L23 & L24	5	Urban conservation & regeneration laws and policies- UNESCO World Heritage legislation and charters; national antiquities and monument laws, including the Archaeological and Antiquities Act and Treasure Trove Act; provisions in master plans for redevelopment, resettlement, and regeneration projects	T1 & R1	1	PPT Digi Class/Chalk -Board	
	L25 & L26	5	Urban conservation & regeneration laws and policies- UNESCO World Heritage legislation and charters; national antiquities and monument laws including the Archaeological and Antiquities Act and Treasure Trove Act; provisions in master plans for redevelopment, resettlement, and regeneration projects	T1 & R1	1	PPT Digi Class/Chalk -Board	
	L27 & L28	5	Policies and strategies for the revitalisation,	T1 & R1	1	PPT Digi Class/Chalk -Board	

			redevelopment, recycling, and conservation of historic, traditional, and informal urban areas				
	L29 & L30	5	Policies and strategies for the revitalisation, redevelopment, recycling, and conservation of historic, traditional, and informal urban areas	T1 & R1	1	PPT Digi Class/Chalk -Board	

COURSE INFORMATION SHEET

Course code: **HS24131**
Course title: **Communication Skills I**
Pre-requisite(s): None
Co- requisite(s): None
Credits: 1.5 L: 0 T: 0 P: 3
Class schedule per week: 03
Class: M. Plan
Semester / Level: I
Branch: Architecture and Planning
Name of Teacher: Dr. Rohit Pandey

Course Objectives

This course enables the students:

A.	Develop Language Proficiency and communicative competence: Improve students' ability to read, write, speak, and listen effectively in English. In addition, students will also learn and improve politeness strategies in communicative contexts.
B.	Enhance Verbal and Non-Verbal Communication: Train students in both spoken and body language communication for personal and professional interactions.
C.	Enhance Reading Ability: Equip students with the ability to strategically comprehend and interpret visual and textual information.
D.	Enhancing Writing Proficiency: Enable students to write structured reports, emails, resumes, and other professional documents.
E.	Developing Presentation and Public Speaking Skills: Self-assurance during talks, presentations and speeches.

Course Outcomes

After the completion of this course, students will be able to:

CO1.	In a variety of pragmatic and communicative contexts, students will be able to confidently and fluently articulate their ideas.
CO2.	This will enable learners to accurately interpret messages for effective interaction by comprehending audio texts and listening selectively.
CO3.	Learners will be able to examine texts for particular and intricate details, draw inferences, and provide interpretations.
CO4.	Learners will be capable of creating organized written pieces, including paragraphs, essays, and narratives, and will also be able to summarize, paraphrase, and create précis of ideas effectively.
CO5.	Learners will be capable of confidently using verbal and non-verbal communication during speeches and presentations.

Syllabus

Module – I:

Theory
Principles of Fundamental Communication.
Communication theory, various types and methods of communication, communication flow (upward, downward, and horizontal), characteristics of successful communication, obstacles, and approaches, verbal and non-verbal communication, and social context communication—requests, refusals, compliments, and providing constructive feedback.

Practice
Communication:
Study relevant materials or case studies on effective communication, obstacles, strategies, and both verbal and non-verbal aspects. Understand and contextualize the influence of culture and society on communication in both writing and speaking.
Role plays:
Engage in scenario-based questions focusing on communication, body language, and courtesy.
Dialogue writing:
Presenting viewpoints based on various situations or scenarios—including requests, refusals, compliments, and criticism—in both writing and speaking.

Module – II

Theory
Communicating, Depicting, and Hearing:
Salutations, Presenting oneself/others, Descriptive communication for locations, objects, scenarios, challenges, etc. Proficient listening abilities and the various aspects of listening, including types such as intensive, responsive, selective and extensive. A brief introduction to Varieties of English Accents (neutral accent) through audio and video examples.

Practice tasks
Introducing people/Describing people:
- Introducing oneself and others
- Characterizing an individual, image, circumstance
- Discussing traits (positive/negative/critical) about a person, object, scenario, or image.

Listening skills:
- Engaging in attentive listening activities
- Listening selectively to complete the blanks
- Hearing a passage and rephrasing the precise information in your own words (listening comprehension)
- Listening to a discussion on a topic and responding critically.
- Attending to informal workplace interactions and dialogues.

Module – III

Theory
Enhancing Vocabulary and Grammar
Lexicon (Affixes- Inflections-Derivations), Registers, Idiomatic Expressions and Phrasal Verbs, vocabulary in context. Opposites, similar words, and one-word alternatives.
Sentence constructions (word order like SVO, etc.), Paragraphs (Thesis statement, main idea, topic sentences), Generating ideas for paragraph composition.
W. S Allen (Book)

Practice
Vocabulary Building:
- Students utilize specific vocabulary related to various registers to construct paragraphs, narratives, and more.
- Students incorporate phrasal verbs to create a coherent paragraph.
- Exercises involving antonyms, synonyms, and word substitution can be conducted using worksheets.
- Engage graphic organizers such as word associations and concept mapping for vocabulary enhancement activities.
Identify suffixes, prefixes, idioms, and phrasal verbs:
- Analyze texts to find suffixes and prefixes along with their definitions.
- Word association and spider diagrams can be utilized to uncover suffixes and prefixes.
Paragraph writing:
- Generate ideas about a topic/concept/idea and prompt students to compose a detailed paragraph.

Module – IV

Theory
Elements of Reading and Writing
Present the sub-skills involved in reading and writing, including the different types of reading such as close reading and intensive reading. Techniques like mind mapping and note-taking.

Generating ideas through brainstorming, structuring thoughts, and creating coherent written pieces consisting of an introduction, body, and conclusion. Writing letters, summaries, précis, resumes, essays, narratives, biographies, and news articles.

Practice
Reading:
- Encourage students to distinguish between factual and inferential information from a text.
- Read a passage and create a mind map outlining the main and supporting ideas of the content.
- Read the text and take notes.
- Read and interpret the author's perspective.
- Read and conduct a critical analysis of the text.
- Read a passage and provide constructive feedback.
(speaking/writing modality)

Writing:
- Compose a summary.
- Write a précis.
- Create a resume.
- Develop an essay.
- Write a narrative account, whether personal or about others.
- Produce a news column.

Module – V

Theory
Public speaking and presentation abilities

Public speaking and presentation techniques
Public speaking, objectives of a speech – to inform, entertain, persuade, or commemorate/celebrate. Methods of persuasion in speeches – ethos, logos, and pathos. Speech preparation – researching background information, organizing content, crafting an introduction, developing main points, and concluding effectively. Showcasing structured speeches – welcome addresses, farewell remarks, expressions of gratitude (examples may be provided in written scripts, videos, or audio recordings).
Presentation etiquette, verbal presentations, poster displays, and delivering speeches.

Practice
Public speaking:
- Deliver an opening speech (during the Annual day, General meeting, sports day, cultural events)
- Present a farewell address
- Express gratitude through a vote of thanks
- Make a persuasive speech (given a specific scenario)
- Engage in an extempore speech

Presentations:
- Conduct a role play
- Prepare a PowerPoint presentation
- Create a poster presentation

Textbooks:
1) Communication Skills (2015) 2nd edition, Sanjay Kumar & Pushp Lata, Oxford University Press
2) Business Correspondence and Report Writing (2017), R.C.Sharma, Krishna Mohan. McGraw Hill

Reference Books:
1) Basic Business Communication-(2004). Lesikar I Flatley, McGraw Hill
2) Business Communication Today, (2017), Bovee, Thill and Chatterjee, Pearson
3) Krishnan, M, & Jha, S.(2024). *Focus: A course in Communication Skills*. Cambridge University Press
4) Suparna Dutta, 2013 Business Communication, PHI Learning Pvt Ltd, New Delhi

Gaps in the syllabus (to meet Industry/Profession requirements) : nil

POs met through Gaps in the Syllabus: Nil

Topics beyond syllabus/Advanced topics/Design: Nil

POs met through Topics beyond syllabus/Advanced topics/Design: Nil

Course Delivery Methods:

CD1	Lecture by use of boards/LCD projectors/OHP projectors	✔
CD2	Assignments/Seminars	✔

CD3	Laboratory experiments/teaching aids	✔
CD4	Industrial/guest lectures	
CD5	Industrial visits/in-plant training	
CD6	Self- learning, such as the use of NPTEL materials and the internet	✔
CD7	Simulation	

DIRECT ASSESSMENT

Assessment Tool	**% Contribution during CO Assessment**
Continuous Internal Assessment	60
End Semester exams	40

Continuous Internal Assessment	% Distribution
Day-to-day performance & assignments	30
Quiz 1	10
Viva- Voce	20

End Semester Examination	% Distribution
Examination: Submission of reports	30
Viva- Voce	10

Assessment Components	**CO1**	**CO2**	**CO 3**	**CO 4**	**CO 5**
Continuous Internal Assessment	✔	✔	✔	✔	✔
Examination: Submission of reports	✔	✔	✔	✔	✔

MAPPING BETWEEN COURSE OUTCOMES AND COURSE DELIVERY METHOD

Course Outcomes	**Course Delivery Method**
CO 1	CD2, CD 3
CO 2	CD 3, CD 6
CO 3	CD 1, CD 2
CO 4	CD 3, CD6
CO 5	CD 2, CD3, CD6

Lecture wise Lesson planning Details.

Week no	Lecture No	Ch No.	Topics to be covered	Textbook/References	COs mapped	Methodology used	Remarks by faculty
	L1	1	Communication theory, types and methods, communication flow (upward, downward, and horizontal),	Theory	CO1, CO2, CO3, CO5	CD1, CD3	

			characteristics of successful communication, obstacles, and approaches,				
	L2	1	Reading Case studies related to L1, discussion, group work, pair work	Practice	CO1, CO3, CO5	CD2, CD3,	
	L3	1	Discussion, group work, pair work	Practice	CO1, CO3, CO5	CD2, CD3,	
	L4	1	verbal and non-verbal communication, and social context communication—requests, refusals, compliments, and providing constructive feedback.	Theory	CO1, CO2, CO3, CO5	CD1, CD3	
	L5	1	Role plays with given situations,	Practice	CO1, CO3, CO5	CD2, CD3,	
	L6	1	dialogues writing with the given situations	Practice	CO1, CO3, CO5	CD2, CD3,	
	L7	2	Salutations, Presenting oneself/others, Descriptive communication for locations, objects, scenarios, challenges, etc.	theory	CO1, CO2, CO3, CO5	CD1, CD3	
	L8	2	Introducing oneself as well as others (guest of honour, friend, etc.) Characterizing an individual, image, circumstance Discussing traits (positive/negative/critical) about a person, object, scenario, or image	Practice	CO1, CO3, CO5	CD2, CD3,	

	L9	2	Introducing oneself as well as others (guest of honour, friend, etc.) Characterizing an individual, image, circumstance Discussing traits (positive/negative/critical) about a person, object, scenario, or image	Practice	CO1, CO3, CO5	CD2, CD3,	
	L10	2	Proficient listening abilities and the various aspects of listening, including types such as intensive, responsive, selective, and extensive	Theory	CO1, CO2, CO3, CO5	CD1, CD3	
	L11	2	Listening selectively to complete the blanks Hearing a passage and rephrasing the precise information in your own words (listening comprehension) Listening to a discussion on a topic and responding critically. Attending to informal workplace interactions and dialogues.	Practice	CO1, CO3, CO5	CD2, CD3,	
	L12	2	Listening selectively to complete the blanks Hearing a passage and rephrasing the precise information in your own words (listening comprehension) Listening to a discussion on a topic and responding critically. Attending to informal workplace interactions and dialogues.	Practice	CO1, CO3, CO5	CD2, CD3,	

	L13	3	Lexicons, Affixes (Inflection/Derivation), Registrars, Idiomatic Expressions and Phrasal Verbs, vocabulary in context. Opposites, similar words, and one-word alternatives.	Theory	CO1, CO2, CO3, CO5	CD1, CD3	
	L14	3	Students use vocabulary- registrars, phrasal verbs, idioms, antonyms, prefixes, suffixes etc to generate productive tasks- spidergram, graphic organizers	Practic	CO1, CO3, CO5	CD2, CD3,	
	L15	3	Students use vocabulary- registrars, phrasal verbs, idioms, antonyms, prefixes, suffixes etc to generate productive tasks- spidergram, graphic organizers	Practice	CO1, CO3, CO5	CD2, CD3,	
	L16	3	Sentence constructions - Simple, compound, and complex, Expanded paragraphs (main idea, topic sentences), Generating ideas for paragraph composition.	Theory	CO1, CO2, CO3, CO5	CD1, CD3	
	L17	3	Generate ideas about a topic/concept/idea and prompt students to compose a detailed paragraph.	Practice	CO1, CO3, CO5	CD2, CD3,	
	L18	3	Generate ideas about a topic/concept/idea and prompt students to compose a detailed paragraph.	Practice	CO1, CO3, CO5	CD2, CD3,	
	L19	4	Present the sub-skills involved in reading and writing, including the	Theory	CO1, CO2, CO3,	CD1, CD3	

			different types of reading such as close reading and intensive reading. Techniques like mind mapping and note-taking.		CO6		
	L20	4	Reading: - Encourage students to distinguish between factual and inferential information from a text. - Read a passage and create a mind map outlining the main and supporting ideas of the content.	Practice	CO1, CO3, CO5	CD2, CD3,	
	L21	4	Reading Read the text and take notes. - Read and interpret the author's perspective. - Read and conduct a critical analysis of the text. - Read a passage and provide constructive feedback. (speaking/writing modality)	Practice	CO1, CO3, CO5	CD2, CD3,	
	L22	4	Generating ideas through brainstorming, structuring thoughts, and creating coherent written pieces consisting of an introduction, body, and conclusion. Writing letters, summaries, précis, resumes, essays, narratives, biographies, and news articles.	Theory	CO1, CO2, CO3, CO6	CD1, CD3	
	L23	4	Writing: - Compose a summary. - Write a précis. - Create a resume. - Develop an essay.	Practice	CO1, CO3, CO5	CD2, CD3,	

	L24	4	Wrinting Write a narrative account, whether personal or about others. - Produce a news column.	Practice	CO1, CO3, CO5	CD2, CD3,	
	L25	5	Public speaking and presentation techniques Public speaking, objectives of a speech – to inform, entertain, persuade, or commemorate/celebrate . Methods of persuasion in speeches – ethos, logos, and pathos. Speech preparation – researching background information, organizing content, crafting an introduction, developing main points, and concluding effectively.	Theory	CO1, CO2, CO3, CO6	CD1, CD3	
	L26	5	Public speaking: - Deliver an opening speech (during the Annual day, General meeting, sports day, cultural events)	Practice	CO1, CO3, CO5	CD2, CD3,	
	L27	5	Present a farewell address - Express gratitude through a vote of thanks	Practice	CO1, CO3, CO5	CD2, CD3,	
	L28	5	Showcasing structured speeches – welcome addresses, farewell remarks, expressions of gratitude (examples may be provided in written scripts, videos, or audio recordings). Presentation etiquette, verbal presentations,	Theory	CO1, CO2, CO3, CO6	CD1, CD3	

			poster displays, and delivering speeches.				
	L29	5	- Make a persuasive speech (given a specific scenario) - Engage in an extempore speech	Practice	CO1, CO3, CO5	CD2, CD3,	
	L30	5	Presentations: - Conduct a role play - Prepare a PowerPoint presentation - Create a poster presentation	Practice	CO1, CO3, CO5	CD2, CD3,	

COURSE INFORMATION SHEET

Course code: **ARP 26621**
Course title: **Planning Studio -Local Area Planning Using Socio-Economic Tools**
Pre-requisite(s): None
Co- requisite(s): None
Credits: 05 L: 0 T: 0 P: 10
Class schedule per week: 10
Class: M. Plan
Semester / Level: I
Branch : Architecture & Planning
Name of Teacher: Dr. Satyaki Sarkar

Course Objectives
This course enables the students:

A	To understand the micro-spatial dynamics of a selected local area (ward or neighborhood).
B.	To apply socio-economic survey techniques and analytical tools to identify community needs.
C.	To develop a Local Area Plan that integrates land use, infrastructure, and socio-economic upliftment.

Course Outcomes
After the completion of this course, students will be able to:

CO1.	To examine the intricate interplay between the built environment and social behaviour,
CO2.	To identify appropriate planning strategies in the local planning context.
CO3	To recognize and make scientifically informed decisions about planning issues in planning areas.

Syllabus
Phase I: Contextualization and Reconnaissance

- Site Selection: Identification of a study area (50 - 100 hectares) with diverse socio-economic profiles.
- Literature Review: Understanding statutory frameworks (e.g., AMRUT, Smart Cities, or Town Planning Schemes).
- Base Map Preparation: Using GIS/AutoCAD to map existing land use, building heights, and footprints.

Phase II: Socio-Economic Data Collection & Analysis

- Demographic Profiling: Population density, household size, and migration patterns.
- Economic Mapping: Formal vs. informal sectors, livelihood patterns, and household income levels.
- Social Infrastructure: Mapping access to healthcare, education, and recreational spaces.
- Tools Application: Deployment of Participatory Rural/Urban Appraisal (PRA/PUA), Focus Group Discussions (FGD), and Likert-scale satisfaction surveys.

Phase III: Infrastructure and Physical Assessment

- Utility Mapping: Water supply, sewerage, solid waste management, and drainage.

- Mobility: Street hierarchy, pedestrian comfort (walkability), and last-mile connectivity.
-
- Environmental Quality: Mapping of open spaces, air quality, and urban heat islands.

Phase IV: Strategy and Proposals

- Gap Analysis: Identifying the "deficit" between existing conditions and planning standards (e.g., URDPFI guidelines).
- Visioning: Formulating a community-led vision for the area.
- Proposals: Zoning regulations, street redesign, social housing strategies, and local economic development plans.
- Phasing & Budgeting: Rough cost estimation and implementation timelines.

Socio-Economic Tools for the Studio

To make the project robust, students should utilize specific analytical frameworks:

Tool	**Purpose**
SWOT Analysis	Identifying Strengths, Weaknesses, Opportunities, and Threats/Challenges.
Housing Proximity Index	Assessing the spatial relationship between settlements and resources.
Gini Coefficient	Measuring income inequality within the local area.
Social Mapping	Visualizing how different social groups utilize public space

Reference Books:

R1 - URDPFI Guidelines (2014): *Urban and Regional Development Plans Formulation and Implementation*, Ministry of Housing and Urban Affairs, Govt. of India.

R2 - The World Bank: *The Local Economic Development (LED) Series* for community-based economic strategies.

Books & Academic Literature

T1 - Clara Greed (2020): *Introducing Planning: Transitions to Sustainability and Socio-Economic Justice*.

T2 - Jan Gehl (2011): *Life Between Buildings: Using Public Space* (Crucial for micro-level spatial analysis).

T3 - N.V. Ratnam (2019): *Socio-Economic Surveys in Planning* (For methodology on primary data collection).

Gaps in the syllabus (to meet Industry/Profession requirements) : nil

POs met through Gaps in the Syllabus: Nil

Topics beyond syllabus/Advanced topics/Design: Nil

POs met through Topics beyond syllabus/Advanced topics/Design: Nil

	Course Delivery methods
CD1	Lecture by use of boards/LCD projectors/OHP projectors
CD2	Tutorials/Assignments
CD3	Seminars
CD4	Industrial/guest lectures

Course Outcome (CO) Attainment Assessment tools & Evaluation procedure

Direct Assessment

Assessment Tool	% Contribution during CO Assessment
Progressive evaluation	50
End-semester evaluation	50

Assessment Components	CO1	CO2	CO3
End Sem Examination Marks	√	√	√
Interim reviews	√	√	√
Seminar	√	√	√
Assignment	√	√	√

Indirect Assessment –

1. Student Feedback on Faculty
2. Student Feedback on Course Outcome

Mapping between Objectives and Outcomes

Mapping of Course Outcomes onto Program Outcomes

Course Outcome #	Program Outcomes					
	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	2	2	3	2	1
CO 2	3	3	3	2	1	1
CO 3	1	3	3	3	2	3

Mapping Between COs and Course Delivery (CD) methods		
CD	**Course Delivery methods**	**Course Outcome**
CD1	Lecture by use of boards/LCD projectors/OHP projectors	CO1, CO2, CO3
CD2	Tutorials/Assignments	CO2, CO3
CD3	Seminars	CO3
CD4	Industrial/guest lectures	CO3

Lecture wise Lesson planning Details.

Week No.	Lect. No.	Topics to be covered	TextBook / References	COs mapped	Methodology used
1	1-8	Assignment 1	T-2, R-1	CO1, CO2	Computerised formats
2-3	9-24	Assignment 1	T-2, R-1	CO1, CO2, CO3	Computerised formats
3	25	Internal evaluation			
4	26-32	Assignment 1	T-2, R-1	CO1, CO2, CO3	Computerised formats
5-7	33-55	Assignment 1			Computerised formats
7	56	Internal evaluation			
8-10	57-79	Assignment 1	T-1,2, R-1,2,3	CO3,	Computerised formats
10	80	Internal evaluation			

		of progress			
11-12	90-116	Assignment 1	T-1,2, R-1,2,3	CO3	Computerised formats
13-14	85	Assignment 1	T-1,2, R-1,2,3	CO3	Computerised formats

COURSE INFORMATION SHEET

Course code: **ARP 26622**
Course title: **Planning Studio – Geo-Spatial Technologies**
Pre-requisite(s): None
Co- requisite(s): None
Credits: 02 L: 0 T: 1 P: 3
Class schedule per week: 04
Class: M. Plan
Semester / Level: I
Branch: Architecture and Planning
Name of Teacher: Dr. Tiwari Pavan Kumar, Dr. Revati Raman

Course Objectives

This course enables the students:

A.	To expose students to GIS and Remote Sensing techniques
B.	To use geospatial technology for urban mapping
C.	To understand remote sensing and image analysis for urban areas
D.	To provide technical inputs for the use of GIS in planning and perform planning analyses using Geographic Information Systems as a tool.

Course Outcomes

After the completion of this course, students will be able to:

CO1.	To use various commands, digitisation tools, preparation of various plans, and analyse/ interpret the remote sensing data using the GIS to produce the desired results.
CO2.	To present problems, potentials, future projections, and spatial proposals through various maps based upon the aims and objectives of a project for the study area.

Syllabus

Introduction to Geographic Information Systems and Remote Sensing:
Concept of remote sensing; Map projections; Resolutions – Spatial, Temporal, Spectral, Radiometric; Geographic Information Systems, platforms, software, tools.

Remote sensing data sources:
Various national and international satellite systems for remote sensing; platforms for sourcing remote sensing data; data formats, types, and extraction.

Image Processing:
Visual Image Interpretation; Raster data Analysis; Digital Image processing; Unsupervised classification; Supervised classification; Spatial Database Management Systems.

Mapping and Analysis:
Land-use and land-cover change detection; hydrological analysis; DEM-based environmental mapping and analysis.

Advancements & Applications in planning:

Aerial photography; Drone-based remote sensing, application of Artificial Intelligence in RS and GIS; Python for GIS in Urban Planning. Advanced analytical applications, such as multicriteria decision making.

Text books:

T1- Joseph, G., & Jaganathan, C. (2018). Fundamentals of remote sensing (3rd ed.). Universities Press.
T2- Klosterman, R. E. (2020). GIS for urban and regional planning. Routledge.
T3- Roy, P. S., & Dwivedi, R. S. (2017). Remote sensing and GIS for urban planning. Indian Institute of Remote Sensing.
T4- Fang, Y., Shandas, V., & Arriaga Cordero, E. (2014). Spatial thinking in planning practice: An introduction to GIS. Portland State University Library.

Reference books:

R1- Mohan, S., Munoth, N., & Sharma, N. (2025). Smart buildings and cities with remote sensing and GIS. Chapman & Hall/CRC.
R2- Ujang, U., & Yadava, R. N. (2026). Innovations in geospatial technology for sustainable smart city development. Springer.
R3- Vishvakarma, P., & Sahu, S. K. (2023). Geospatial technologies in urban planning: Current trends and future prospects. ISBM University.
R4- Weng, Q. (2018). Urban remote sensing: Monitoring, synthesis and modelling in the urban environment. Wiley.
R5- National Institute of Urban Affairs. (2022). Integrated urban planning using GIS: A training manual for urban practitioners. NIUA.

Gaps in the syllabus (to meet Industry/Profession requirements): Nil

POs met through Gaps in the Syllabus: Nil

Topics beyond syllabus/Advanced topics/Design: Nil

POs met through Topics beyond syllabus/Advanced topics/Design: Nil

Course Delivery methods
Lecture by use of boards/LCD projectors/OHP projectors
Tutorials/Assignments
Seminars
Mini projects/Projects
Laboratory experiments/teaching aids
Industrial/guest lectures
Industrial visits/in-plant training
Self- learning such as use of NPTEL materials and internets
Simulation

Course Outcome (CO) Attainment Assessment tools & Evaluation procedure

Direct Assessment

Assessment Tool	% Contribution during CO Assessment
Progressive Evaluation	50
End Sem Examination	50

Assessment Components	CO1	CO2
Progressive Evaluation	√	√
End Sem Evaluation	√	√

Indirect Assessment –

1. Student Feedback on Faculty
2. Student Feedback on Course Outcome

Mapping between Objectives and Outcomes

Mapping of Course Outcomes onto Program Outcomes

Course Outcome #	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	2	3	2	3	1	2
CO 2	3	2	3	3	1	2

Mapping Between COs and Course Delivery (CD) methods			
CD	**Course Delivery Methods**	**Course Outcome**	**Course Delivery Method**
CD1	Lectures by use of boards/LCD projectors/OHP projectors	CO1 CO2	CD 1 CD 2
CD2	Tutorials/Assignments	CO1 CO2	CD 2 CD 3 CD 9
CD3	Seminars		
CD4	Mini projects/Projects	CO1 CO2	CD 1 CD 2 CD 9
CD5	Laboratory experiments/teaching aids	CO1 CO2	CD 1 CD 2 CD 9
CD6	Industrial/guest lectures		
CD7	Industrial visits/in-plant training		
CD8	Self- learning such as use of NPTEL materials and internets	CO1 CO2	CD 1 CD 2 CD 9
CD9	Simulation	CO1 CO2	CD 1 CD 2 CD 9

Lecture wise Lesson planning Details.

Week No.	Lect. No.	Ch. No.	Topics to be covered	Text Book / References	COs mapped	Methodology used	Remarks by faculty if any
1-2	L1-L8		Introduction to Geographic Information Systems and Remote Sensing:	T1,2, R1,3	1, 2	PPT Digi Class/Chock -Board	

3-5	L9-L20		Remote sensing data sources:	T1,2 R1, 4	1, 2	PPT Digi Class/Chock -Board, Simulation	
5-8	L21-32		Image Processing:	T3,4 R2,3,5		PPT Digi Class/Chock -Board, Simulation	
8-11	L33 - L44		Mapping and Analysis:	T2,3 R1,2, 5	1, 2,3	PPT Digi Class/Chock -Board, Simulation	
12-14	L45 - L56		Advancements & Applications in planning:	T1,2. R1,2.	3,4	PPT Digi Class/Chock -Board, Simulation	
15			Internal evaluation of progress				

SEMESTER

II

COURSE INFORMATION SHEET

Course code: **ARP 26651**
Course title: **City and Metropolitan Planning**
Pre-requisite(s): None
Co- requisite(s): None
Credits: 03 L: 3 T:0 U:0
Class schedule per week: 3
Class: M. Plan
Semester / Level: II
Branch: Architecture and Planning
Name of Teacher: Anjali Pathak

Course Objectives

This course enables the students:

A.	To understand the dynamics of human settlement, both past and present, through various theories and approaches
B.	To study the growth of metro and mega cities and their relationship with their respective regions
C.	To understand various theories, concept, models and approaches of planning that have influence/directed/guided the planning process
D.	To understand the planning process and various types of plans, especially in India

Course Outcomes

After the completion of this course, students will be able to:

CO1.	Able to appreciate urbanisation and terminologies regarding urban areas
CO2.	To appreciate the legislative structure for metropolitan planning and development
CO3.	To analyse the nature, form, and planning of metropolitan cities and regions in India
CO4.	To have a global perspective regarding the planning and development strategies of a metropolis

Syllabus

Module 1: Theories of Development
Growth of cities; cities as engines of growth; urban sprawl; land value; economic attributes of activity location; economic forces in urban development; structure of city regions; area of influence; impact of technology on urban settlement; theories of urban structure and land use central place theory, urban realm model, new urbanism; territorial development theory

Module 2: Theories of Urban Structure
Growth pole theory; urban bias critiques, secondary cities and urban diffusion; system approach to planning; threshold analysis, retail location and industrial location analysis, transport system analysis, Desakota model, emerging rural and urban relationship model, globalisation and extended metropolitan region; networked model; peri-urban interface (PUI) case studies.

Module 3: Planning Norms and Standards
Land Use standards for residential, industrial, commercial, institutional, transport, ecological spaces, recreational areas, etc; space standards based on population for facility areas, utilities an network, performance standards, URDPFI, RADPFI, Hill area development guidelines standards and other model guidelines by state and central development ministries (central) and states, building Bye laws, FSI and Formed based norms and standards.

Module 4: Plan Preparation Approaches and Techniques
Approaches for preparation of urban development plans, master plans, structure plans, and strategy plans, public participation and plan implementation, zonal and local area plan, techniques of urban renewal and redevelopment, special area planning: defining, types, attributes requirement, planning process, inner areas, peri-urban areas and planning approaches, smart city: concepts, element, features, planning approaches and strategies, policy efforts in India, inclusive city

Module 5: Best Practices in City and Metropolitan Planning
Best practices of city and metropolitan planning in India and abroad, inter-disciplinary policy issues and public action guided city and metropolitan development

Text books:
T1 Aggarwalla Astha. (2011). Agglomeration Economies and Productivity Growth in India. Indian Institute of Management, Ahmadabad.
T2 BMRDA (2016). Bangalore Metropolitan Region Revised Structure plan 2031. BMRDA, Bangalore.
T3 Board N. C.R. P. Regional Plan 2021. National Capital Region. Government of India, New Delhi.
T4. Clark G. and T. Moonen (2014). Mumbai: India's Global City. Brookings Inst Pr., Massachusetts.
T5 Glasson J. (1974). An Introduction to Regional Planning. Taylor and Francis ltd., London.
T6 HMDA. (2013). Metropolitan Development Plan – 2031 for Hyderabad Metropolitan Development Region. HMDA, Hyderabad.
T7 Jaidit Brar S. G. A. M. C. M. S. R. M. S. (2014). India’s Economic Geography in 2025: States, Clusters and Cities. McKinsey and Company, Delhi.
T8 KMDA. (2000). Perspective Planning for metropolitan Development, Kolkata. KMDA, Kolkata.
T9 Ministry of Urban Development. (2014). Regional Planning Approach, URDPFI Vol. I and Vol.2. Government of India, New Delhi.

Reference books:
R1 Wheeler S. (2009). Regions, Mega regions, and Sustainability. Regional Studies, Vol. 43.6, pp. 863-876, Routledge Informa Ltd, England.
R2 Bhattacharya Shromoyee & Sujaya Rathi (2015). Re-conceptualizing Smart Cities: A reference framework for India. Niti Aayog, Government of India.
R3 The World Bank (2015). World: Inclusive Cities Approach Paper. Report No. AUS8539. IBRD, The World Bank, Washington D.C.
R4 Deuskar Chandan (2020). Informal Urbanization and Clientelism: Measuring the global relationship. Sage, London.
R5 Mahadevia D. (2024). Urban Planning and its Discontents: Practice in Contemporary India. Taylor & Francis Books India Pvt. Ltd, London.

R6 Keitel M.L. and Lukas Behrend (2023). The Topology of Planning Theories. Springer, Berlin.

Gaps in the syllabus (to meet Industry/Profession requirements): Nil

POs met through Gaps in the Syllabus: Nil

Topics beyond syllabus/Advanced topics/Design: Nil

POs met through Topics beyond syllabus/Advanced topics/Design: Nil

Course Delivery methods
Lecture by use of boards/LCD projectors/OHP projectors
Tutorials/Assignments
Seminars
Mini projects/Projects
Laboratory experiments/teaching aids
Industrial/guest lectures
Industrial visits/in-plant training
Self- learning such as use of NPTEL materials and internets
Simulation

Course Outcome (CO) Attainment Assessment tools & Evaluation procedure

Direct Assessment

Assessment Tool	% Contribution during CO Assessment
Quiz I	10
Quiz II	10
Quiz III	10
End Sem Examination Marks	50
Assignment	10
Seminar	10

Assessment Components	CO1	CO2	CO3	CO4
Quiz I	√	√	√	√
Quiz II	√	√	√	√
Quiz III	√	√	√	√
End Sem Examination	√	√	√	√
Assignment	√	√	√	√
Seminar	√	√	√	√

Indirect Assessment –

1. Student Feedback on Faculty
2. Student Feedback on Course Outcome

Mapping between Objectives and Outcomes

Mapping of Course Outcomes onto Program Outcomes

Course Outcome #	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	2	1	1	2	1	2
CO 2	2	2	2	2	2	2
CO 3	2	1	1	1	2	2
CO 4	3	2	3	2	2	3

Mapping Between COs and Course Delivery (CD) methods			
CD	**Course Delivery methods**	**Course Outcome**	**Course Delivery Method**
CD1	Lecture by use of boards/LCD projectors/OHP projectors	CO1	CD1, CD2, CD3
CD2	Tutorials/Assignments	CO2	CD1, CD2, CD3
CD3	Seminars	CO3	CD1, CD2, CD3
CD4	Mini projects/Projects	CO4	CD1, CD2, CD3
CD5	Laboratory experiments/teaching aids		
CD6	Industrial/guest lectures		
CD7	Industrial visits/in-plant training		
CD8	Self- learning such as use of NPTEL materials and internet		
CD9	Simulation		

Lecture wise Lesson planning Details.

Week No.	Lect. No.	Ch. No.	Topics to be covered	Text Book / Refere nces	COs mapped	Methodology used	Remarks by faculty if any
1	L1	1	Growth of cities; cities as engines of growth; urban sprawl;		1	PPT Digi Class /Chalk -Board	
1	L2	1	land value; economic attributes of activity location; economic forces in urban development		1	PPT Digi Class/Chalk -Board	
2	L3	1	structure of city regions; area of influence; impact of technology on urban settlement;		1	PPT Digi Class/Chalk -Board	
2	L4	1	theories of urban structure and land use		1	PPT Digi Class/Chalk	

			central place theory, urban realm model, new urbanism; territorial development theory			-Board	
3	L5	2	Growth pole theory; urban bias critiques, secondary cities and urban diffusion;		1	PPT Digi Class/Chalk -Board	
3	L6	2	system approach to planning; threshold analysis, retail location and industrial location analysis		1	PPT Digi Class/Chalk -Board	
4	L7	2	transport system analysis, Desakota model,		2	PPT Digi Class/Chalk -Board	
4	L8	2	emerging rural and urban relationship model, globalisation and extended metropolitan region; networked model; peri-urban interface (PUI) case studies		2	PPT Digi Class/Chalk -Board	
5	L9	3	Land Use standards for residential, industrial, commercial, institutional, transport, ecological spaces, recreational areas, etc; space standards based on population for facility areas, utilities an network		2, 4	PPT Digi Class/Chalk -Board	
5	L10	3	performance standards, URDPFI, RADPFI, Hill area development guidelines standards and other model guidelines by state and central development ministries (central) and states		2, 4	PPT Digi Class/Chalk -Board	
6	L11	3	building Bye laws, FSI and Formed based norms and standards.		2, 4	PPT Digi Class/Chalk -Board	
6	L12	4	Approaches for preparation of urban development plans,		3	PPT Digi Class/Chalk -Board	

			master plans, structure plans, and strategy plans,				
7	L13	4	public participation and plan implementation, zonal and local area plan,		3	PPT Digi Class/Chalk -Board	
7	L14	4	techniques of urban renewal and redevelopment, special area planning		3	PPT Digi Class/Chalk -Board	
8	L15	4	peri-urban areas and planning approaches		3	PPT Digi Class/Chalk -Board	
8	L16	4	smart city: concepts, element, features, planning approaches and strategies, policy efforts in India, inclusive city		3	PPT Digi Class/Chalk -Board	
9	L17	5	Best practices of metropolitan planning in India		4	PPT Digi Class/Chalk -Board	
9	L18	5	Best practices of metropolitan planning in abroad		4	PPT Digi Class/Chalk -Board	
10	L19	5	Land price behaviour in urban centres; Constructing the land price index;		4	PPT Digi Class/Chalk -Board	
10	L20	5	Interdisciplinary policies		4	PPT Digi Class/Chalk -Board	
11	L21	5	Issues in guiding city and metropolitan development		4	PPT Digi Class/Chalk -Board, Lab experiment	
11	L22	5	Public actions for guiding city and metropolitan development.		4	PPT Digi Class/Chalk -Board, Lab experiment	

COURSE INFORMATION SHEET

Course code: **ARP 26652**
Course title: **Regional Planning**
Pre-requisite(s): None
Co- requisite(s): None
Credits: 03 L: 3 T: 0 P: 0
Class schedule per week: 03
Class: M. Plan
Semester / Level: II
Branch: Architecture and Planning
Name of Teacher: Ritu Agrawal

Course Objectives

This course enables the students:

A.	To understand the theories and tools of regional development.
B.	To understand Indian region typology and its use in the planning process.
C.	To understand various programmes and projects associated with various types of regions in India

Course Outcomes

After the completion of this course, students will be able to:

CO1.	To understand the theories in regional planning.
CO2.	To understand and appreciate tools and indicators to be used in regional planning.
CO3.	To appreciate the programmes and projects associated with various types of regions in India.

Syllabus

Module 1: Concepts and Typology of Regions
Basic Concepts in Regions; Defining a region: fluidity and purposiveness; Typology of Regions: Resource Regions, Mega, Macro, Meso, and Micro Regions; Use of clusters in regional planning; Delineation of Regions (Regionalisation); Concept of Global city regions; City beyond region; Rural Settlement Analysis: Types, activity, environment and economic interface in rural habitat; Technology in rural settlement.

Module 2: Regional Dynamics
Growth of Mega and Metro Regions: Scale, Complexity and its impact on national and international scenario, convergence and divergence; International Regions: SAARC, BRICS Latino Region, EU Region, etc.; Regional Economy, competitiveness among regions backward and leading regions in development; Special Regions: SEZ, Agro Regions, Ecological regions, etc.; Regional Disparity Analysis (through factor analysis); Regional Interdependence Analysis (through Input-Output model).

Module 3: Regions in India and its Planning

Resource Regions; Corridors as regions: National, Sub-National, State, sub-state level (District), Blocks and Clusters as a region; Macro, Meso and Micro regions in India; Case Studies from India: NCR and Delhi Mega Region, Mumbai Mega Region, Kolkata Metro Region, Chennai Metro Region, and other Metro Regions in India; Western & Eastern Ghats, North Eastern Region, Coastal Regions, and River Valley Regions; Corridors: Golden Quadrilateral, Delhi-Mumbai, Chennai-Bangalore Industrial Corridor, North-South and East-West Corridor Regions, Core, Fringe and Periphery in a Region and its planning.; Tools and techniques available for planning regions in India; Role of 73 and 74 CAA in regional plan preparation and implementation.

Module 4: Spatial Inequalities
Indexing Spatial Disparities/Inequalities: District Development Product, State Development Product, and National GDP; Human Development Index, Infrastructure Index, Environmental Index, Social Development Index, and Fiscal Transfers based on Indices.

Module 5: Regional Disparities
Overcoming inequalities: Spatial, economic, social, infrastructure, governance, etc.; Tools and incentives used for balancing the development, Sectoral push, Investment Regions, etc.; Use of Thermal Imageries and Satellite Imageries for assessing inequalities over space.

Reference books:

1. Social Sciences. 1. Rengasamy S. (2009). Types of Regions and Regionalization of India. Madurai Institute of
2. Wheeler S. (2009). Regions, Mega regions, and Sustainability. Taylor and Francis, New York.
3. Department of Town and Country Planning (2005). Decentralised Development Plan Government of Kerala, Thiruvananthapuram.
4. United Nation Development Program (2008). Decentralised Development Plan. UNDP, New Delhi.
5. GIZ (2018). Regional Development Guidelines: Urban Vertical, Technical Collaboration
6. with Government of India & Germany, New Delhi. 6. Walter Isard (1975). Introduction to Regional Science. Prentice Hall, New Jersey.
7. The World Bank (2009). New Economic Geography. Washington DC.
8. Nallari Raj, Breda Griffith, and Shahid Yusuf (2012). Geography of Growth: Spatial Economics and Competitiveness. The World Bank, Washington DC.
9. Tukker Arnold, and Erik Dietzenbacher. (2013). Global Multiregional Input-Output Frameworks: An Introduction and Outlook. Taylor and Francis, New York.
10. Board N.C.R.P. Regional Plan (2021). National Capital Region. Government of India, New
11. Delhi. 11. Ministry of Panchayati Raj. (2021). Rural Area Development, Formulation, Policy, Government of India.
12. Ministry of Panchayati Raj. (2022). SVAMITVA. Government of India.
13. Jiwan J. (2021). Regional Development and Planning. Rawat Publications, New Delhi.
14. Dr. Ghosh T.K. and Dr. Satyen Sarkar (2022). Regional Disparities in Economic Development: Policies and Prospects for Balanced Development. Serials Publications Pvt. Ltd., New Delhi.
15. Farhana, I. (2012). The Region and Its Margins: Re-Appropriations of the Border from 'Mahagujarat' to Swarnim Gujarat. Economic and Political Weekly, Vol.32, pp.66-72.

Gaps in the syllabus (to meet Industry/Profession requirements): Nil

POs met through Gaps in the Syllabus: Nil

Topics beyond syllabus/Advanced topics/Design: Nil

POs met through Topics beyond syllabus/Advanced topics/Design: Nil

Course Delivery methods
Lecture by use of boards/LCD projectors/OHP projectors
Tutorials/Assignments
Seminars
Mini projects/Projects
Laboratory experiments/teaching aids
Industrial/guest lectures
Industrial visits/in-plant training
Self- learning such as use of NPTEL materials and internets
Simulation

Course Outcome (CO) Attainment Assessment tools & Evaluation procedure

Direct Assessment

Assessment Tool	**% Contribution during CO Assessment**
Quiz I	10
Quiz II	10
Quiz III	10
End Sem Examination Marks	50
Assignment	10
Seminar	10

Assessment Components	**CO1**	**CO2**	**CO3**
Quiz I	√	√	√
Quiz II	√	√	√
Quiz III	√	√	√
End Sem Examination	√	√	√
Assignment	√	√	√

Indirect Assessment –

1. Student Feedback on Faculty
2. Student Feedback on Course Outcome

Mapping between Objectives and Outcomes

Mapping of Course Outcomes onto Program Outcomes

Course Outcome #	**Program Outcomes**					
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**
CO 1	3	2	2	3	2	1
CO 2	3	3	2	2	3	2

CO 3	3	3	3	2	2	2

Mapping Between COs and Course Delivery (CD) methods			
CD	**Course Delivery methods**	**Course Outcome**	**Course Delivery Method**
CD1	Lecture by use of boards/LCD projectors/OHP projectors	CO1, CO2, CO3	CD1
CD2	Tutorials/Assignments	CO2	CD1, CD3
CD3	Seminars	CO3	CD1, CD2, CD3
CD4	Mini projects/Projects	CO2, CO3	CD2, CD3
CD5	Laboratory experiments/teaching aids	-	-
CD6	Industrial/guest lectures	-	-
CD7	Industrial visits/in-plant training	-	-
CD8	Self- learning such as use of NPTEL materials and internets	CO1, CO2, CO3	-
CD9	Simulation	-	-

Lecture wise Lesson planning Details.

Week No.	Lect. No.	Topics to be covered	Textbook / References	COs mapped	Methodology used	Remarks by faculty if any
1.	L1, L2, L3	Basic Concepts in Regions; Defining a region: fluidity and purposiveness; Typology of Regions: Resource Regions, Mega, Macro, Meso, and Micro Regions; Use of clusters in regional planning.		CO1, CO2	PPT Digi Class/ Chalk -Board	
2.	L4, L5, L6	Delineation of Regions (Regionalisation); Concept of Global city regions; City beyond region; Rural Settlement Analysis: Types, activity, environment and economic interface in rural habitat; Technology in rural settlement.		CO1, CO2	PPT Digi Class/ Chalk -Board	
3.	L7, L8, L9	Growth of Mega and Metro Regions: Scale, Complexity and its impact on national and international scenario, convergence and divergence; International Regions: SAARC, BRICS Latino Region, EU Region, etc.		CO2, CO3	PPT Digi Class/ Chalk -Board	

4.	L10, L11, L12	Regional Economy, competitiveness among regions backward and leading regions in development; Special Regions: SEZ, Agro Regions, Ecological regions, etc.; Regional Disparity Analysis (through factor analysis); Regional Interdependence Analysis (through Input-Output model).		CO1, CO3	PPT Digi Class/ Chalk -Board	
5.	L13, L14	Ist Quiz covering Module 1 and part of Module 2				
6.	L15	Resource Regions; Corridors as regions: National, Sub-National, State, sub-state level (District), Blocks and Clusters as a region.	.	CO2, CO3	PPT Digi Class/ Chalk -Board	
7.	L16, L17, L18	Macro, Meso and Micro regions in India; Case Studies from India: NCR and Delhi Mega Region, Mumbai Mega Region, Kolkata Metro Region, Chennai Metro Region, and other Metro Regions in India; Western & Eastern Ghats, North Eastern Region, Coastal Regions, and River Valley Regions.		CO3, CO4	PPT Digi Class/ Chalk -Board	
8.	L19, L20, L21	Corridors: Golden Quadrilateral, Delhi-Mumbai, Chennai-Bangalore Industrial Corridor, North-South and East-West Corridor Regions, Core, Fringe and Periphery in a Region and its planning.; Tools and techniques available for planning regions in India.		CO2, CO3	PPT Digi Class/Chalk -Board	
9.	L22, L23	Role of 73 and 74 CAA in regional plan preparation and implementation.		CO2, CO3	PPT Digi Class/ Chalk -Board	
10.	L24,	IInd Quiz covering part of Module 2 and Module 3		CO1, CO2		
11.	L25, L26, L27,	Indexing Spatial Disparities/Inequalities: District Development Product, State Development Product, and National GDP; Human Development Index,				

12.	L28, L29	Infrastructure Index, Environmental Index, Social Development Index, and Fiscal Transfers based on Indices.		CO2, CO3	PPT Digi Class/ Chalk -Board	
13.	L30, L31, L32, L33,	Indexing Spatial Disparities/Inequalities: District Development Product, State Development Product, and National GDP; Human Development Index, Infrastructure Index, Environmental Index, Social Development Index, and Fiscal Transfers based on Indices.		CO2, CO3	PPT Digi Class/ Chalk -Board	
14.	L34, L35	Assignment Discussion and Presentation		CO2, CO3	PPT Digi Class/ Chalk -Board	

COURSE INFORMATION SHEET

Course code: **ARP 26653**
Course title: **Research Methodology**
Pre-requisite(s): None
Co- requisite(s): None
Credits: 02 L: 2 T:0 P:0
Class schedule per week: 2
Class: M. Plan
Semester / Level: II
Branch: Architecture and Planning
Name of Teacher: Dr. Prashant Prasad & Dr. Rewati Raman

Course Objectives

This course enables the students:

A.	Develop an understanding of Role of Descriptive, Applied and Causal Research; Qualitative and Quantitative Research; Process of Research and Types of research with application to areas concern.
B.	Explain the mechanism for defining the Research Problem, Research Objectives and Hypothesis framing.
C.	Develop an understanding of merits and limitations of various research designs, types of data and methods of data collection.
D.	To understand various types of research methods and research design both quantitative and qualitative for carrying out research in the real life

Course Outcomes

After the completion of this course, students will be able to:

CO1.	Explain the fundamental concepts, processes, and types of research in planning and architecture, distinguishing between qualitative and quantitative approaches.
CO2.	Apply appropriate methods for conducting literature reviews, formulating research problems, and designing research methodologies, including hypothesis development and sampling techniques.
CO3.	Demonstrate proficiency in using data collection tools, statistical methods, and analytical techniques including quantitative, qualitative, spatial, and emerging digital methods for planning research.
CO4.	Evaluate and interpret research findings, manage bibliographic data, and effectively present research outcomes using referencing tools and academic writing standards.

Syllabus

Module 1: Foundations of Research in Planning:
Introduction to research in Urban and Regional Planning; Areas of research in Urban and Regional Planning; Types of research: Fundamental, Applied, Action, Interdisciplinary; Research methods vs. research methodology; Qualitative vs. Quantitative research; Research

process: Steps and structure; Understanding literature review: Need, types, and process; Referencing styles (APA, MLA, Chicago); Introduction to referencing managers (Zotero, Mendeley, EndNote).

Module 2: Framing Research and Reviewing Knowledge Systems:
Bibliometric analysis techniques; Systematic literature review and meta-analysis; Basics of text mining for literature insights; Identifying and formulating research problems; Research design: exploratory, descriptive, and experimental; Concept of hypothesis: types and role in research.

Module 3: Data Collection Methods and Sampling:
Types of data: primary and secondary; Measurement and scaling techniques; Types of surveys: structured, semi-structured, unstructured; Experimental and simulation research in built environment; Sampling techniques: probability and non-probability methods; Advantages and limitations of sampling techniques; Sample size calculation techniques; Case study method in Planning and Architecture; Online and offline survey methods; Survey tools (Google Forms, Qualtrics, etc.); Database creation and management practices

Module 4: Data Analysis and Interpretation:
Planning Models Overview, Urban Modelling Concepts, Planning Model Applications, Urban Systems Modelling; Data processing: cleaning, coding, and tabulation; Descriptive statistics: mean, median, mode, standard deviation; Inferential statistics: correlation, regression, ANOVA; Hypothesis testing: t-test, chi-square; Quantitative research methods I & II; Statistical tools and software (SPSS, R, Excel); Applications and limitations; Interpretation of results; Case studies in urban and architectural contexts.

Module 5: Advanced Techniques and Contemporary Trends in Research:
Qualitative research methods; Interviews, focus groups, content analysis; Coding and thematic analysis; Case studies; Spatial methods in Planning research; GIS-based applications and spatial analysis; Geovisualization, mapping tools; Emerging tools and techniques in research; AI/ML, IoT, BIM, Digital Twins, Remote Sensing; Case examples and innovative applications; Integration of multi-method approaches (Mixed Methods Research).

Textbooks:

1. Kothari, C. R. (2009) – Research Methodology – Methods and Techniques, New Age International Publishers.
2. Ewing, R. and Park, K. (2020) – Basic Quantitative Research Methods for Urban Planners, Routledge Taylor & Francis.
3. Wang, X. and Hofe V. R. (2007) – Research Methods in Urban and Regional Planning, Springer.

Reference books:

1. Silva, A. E., Heasley, P., Harries, N., Broeck, P. V. (2015) – The Routledge Handbook of Planning Research Methods, Routledge Taylor & Francis.
2. Jonker, J. and Pennink, B. (2010) – The Essence of Research Methodology: A Concise Guide for Master and PhD Students in Management Science, Springer.
3. Scruggs, T. E. and Mastropieri, M. A. (2006) – Applications of Research Methodology, Elsevier.

Gaps in the syllabus (to meet Industry/Profession requirements): Nil

POs met through Gaps in the Syllabus: Nil

Topics beyond syllabus/Advanced topics/Design: Nil

POs met through Topics beyond syllabus/Advanced topics/Design: Nil

Course Delivery methods
Lecture by use of boards/LCD projectors/OHP projectors
Tutorials/Assignments
Seminars
Mini projects/Projects
Laboratory experiments/teaching aids
Industrial/guest lectures
Industrial visits/in-plant training
Self- learning such as use of NPTEL materials and internets
Simulation

Course Outcome (CO) Attainment Assessment tools & Evaluation procedure

Direct Assessment

Assessment Tool	**% Contribution during CO Assessment**
Quiz I	10
Quiz II	10
Quiz III	10
End Sem Examination Marks	50
Assignment	10
Seminar	10

Assessment Components	**CO1**	**CO2**	**CO3**	**CO4**
Quiz I	√	√	√	√
Quiz II	√	√	√	√
Quiz III	√	√	√	√
End Sem Examination	√	√	√	√
Assignment	√	√	√	√

Indirect Assessment –

1. Student Feedback on Faculty
2. Student Feedback on Course Outcome

Mapping between Objectives and Outcomes

Mapping of Course Outcomes onto Program Outcomes

Course Outcome #	**Program Outcomes**					
	PO1	**PO2**	**PO3**	**PO4**	**PO 5**	**PO6**

CO 1	2	2	1	2	1	2
CO 2	2	3	2	3	1	2
CO 3	2	3	2	3	1	2
CO 4	2	2	2	3	1	3

Mapping Between COs and Course Delivery (CD) methods			
CD	**Course Delivery methods**	**Course Outcome**	**Course Delivery Method**
CD1	Lecture by use of boards/LCD projectors/OHP projectors	CO1	CD1
CD2	Tutorials/Assignments	CO2	CD1
CD3	Seminars	CO3	CD1 and CD2
CD4	Mini projects/Projects		
CD5	Laboratory experiments/teaching aids		
CD6	Industrial/guest lectures		
CD7	Industrial visits/in-plant training		
CD8	Self- learning such as use of NPTEL materials and internet		
CD9	Simulation		

Lecture wise Lesson planning Details.

Week No.	Lect. No.	Mo. No.	Topics to be covered	Text Book / References	COs mapped	Methodology used	Remarks by faculty if any
1	L1	1	Introduction to Research in Planning and Architecture	T1, R1	1	PPT Digi Class/Chalk -Board	
	L2	1	Areas & Types of Research; Research Methods vs Methodology	T1, R1	1	PPT Digi Class/Chalk -Board	
2	L3	1	Qualitative vs Quantitative Research	T2, R1	1	PPT Digi	
	L4	1	Research Process	T1, R1	1	PPT Digi Class/Chalk -Board	
3	L5	1	Literature Review – Need and Process	T1, T2	2	PPT / Library Task	
	L6	1	Style of Referencing and Referencing Managers	R1, R3	2	PPT Digi Class/Chalk -Board	

Week No.	Lect. No.	Mo. No.	Topics to be covered	Text Book / References	COs mapped	Methodology used	Remarks by faculty if any
4	L7	2	Bibliometric Analysis	R1, R3	2	PPT / Software Activity	
	L8	2	Systematic Review, Meta-Analysis	R1, R3	2	Case Study	
5	L9	2	Text Mining; Framing Research Problem	T1, R2	3	Chalkboard / Examples	
	L10	2	Hypothesis and Types	T1, R1	3	PPT / Discussion	
6	L11	1,2	**Quiz 1**		1,2,3	Written MCQ / Short Answers	
	L12	3	Types of Data; Measurement & Scaling Techniques	T2, R2	3	PPT/	
7	L13	3	Types of Surveys	T1, R1	3	PPT /Chalkboard	
	L14	3	Experimental & Simulation Methods	T2, R3	3	PPT + Case Discussion	
8	L15	3	Sampling Techniques – Types, Pros & Cons	T1, R3	3	PPT /Chalkboard	Group Activity / Examples
	L16	3	Sample Size Calculation	T1, T2	3	PPT/ Chalkboard	Problem Solving Session
9	L17	3	Case Studies on Sampling & Data Collection	R2, R3	3	PPT	Case Discussion
	L18	3	Survey Methods – Online & Offline	T2, R1	4	PPT	Demo Tools / Interaction
10	L19	3	Survey Tools & Database Management	T3, R3	4	PPT	Handson with tool
	L20	3	**Quiz 2**		3,4	Written MCQ / Short Answers	
11	L21	4	Planning Models	T3, R1	4	PPT/Chalk	

Week No.	Lect. No.	Mo. No.	Topics to be covered	Text Book / References	COs mapped	Methodology used	Remarks by faculty if any
			Overview, Urban Modelling Concepts, Planning Model Applications, Urban Systems Modelling			board	
	L22	4	Processing Data; Descriptive Statistics	T2, R2	4	PPT	
12	L23	4	Hypothesis Testing	T1, R2	4	PPT/Chalk board	Demonstration of examples
	L24	4	Quantitative Research I: Methods, Tools, Case Studies	T2, R2	4	PPT	
13	L25	4	Quantitative Research II: Methods, Tools, Case Studies	T2, R2	4	PPT/ Chalkboard	
	L26	5	Qualitative Research: Methods, Tools & Techniques	T1, R2	5	PPT/ Chalkboard	
14	L27	5	Case Studies in Qualitative Research	R1, R2	5	PPT	
	L28	5	Spatial Methods in Planning; GIS-based Applications	T2, R3	5	PPT	GIS Demo
15	L29	5	Emerging Tools and Techniques in Planning & Architecture Research	R2, R3	5	PPT	Workshop Mode
	L30	4,5 (1,2, 3,4,5)	**Quiz 3 &** Recap + Doubt Clearing Session			Written MCQ / Short Answers	

COURSE INFORMATION SHEET

Course code: **ARP 26654**
Course title: **Ethics, Human and Constitutional Values**
Pre-requisite(s): None
Co- requisite(s): None
Credits: 02 L: 2 T:0 P:0
Class schedule per week: 2
Class: M. Plan
Semester / Level: II
Branch: Architecture and Planning
Name of Teacher: Dr. Rajan Chandra Sinha

Course Objectives

This course enables the students:

A.	To introduce the concepts of ethics and moral responsibility in professional life.
B.	To understand human values and their relevance in urban planning practice
C.	To familiarize with constitutional values of India and citizens' rights and duties.
D.	To develop ethical decision-making skills in planning, governance and development projects.

Course Outcomes

After the completion of this course, students will be able to:

CO1.	To understand ethical principles guiding planning professionals and public institutions
CO2.	To apply human values in inclusive and sustainable urban development.
CO3.	To interpret constitutional provisions related to rights, justice and equality in planning contexts.
CO4.	To demonstrate ethical reasoning in real urban governance and development scenarios.

Syllabus

Module 1: Foundations of Ethics and Human Values
Meaning and nature of ethics, morality, and values; Types of values: personal, social, professional and environmental values; Importance of ethics in professional education and planning practice.

Module 2: Ethical Theories and Ethical Decision Making
Ethical theories: Utilitarianism, Deontology, Virtue ethics; Human values in public life: Integrity, Honesty, Accountability, Empathy; Ethical dilemmas in urban governance and development

Module 3: Human Values in Urban and Regional Planning
Human-centered planning and inclusive development, social justice in planning practice, Equity and fairness in resource allocation, Ethics in: Land use planning, Housing policies, Infrastructure development; Stakeholder participation and community engagement; Environmental ethics and sustainable development; Ethics in planning decisions affecting vulnerable communities (slums, informal settlements, tribal areas).

Module 4: Constitutional Values and Governance
Philosophy and basic features of the Constitution of India, Constitutional values: Justice (social, economic, political), Liberty, Equality, Fraternity; Fundamental Rights, Directive Principles of State Policy, Fundamental Duties of citizens, Role of governance institutions in upholding constitutional values, Transparency, accountability and rule of law in planning administration.

Module 5: Professional Ethics and Ethical Decision Making in Planning
Professional ethics in planning and public service, Codes of ethics for planners and public administrators, Corruption, conflict of interest and misuse of authority, Ethical leadership in urban governance, Ethics in smart cities, digital governance and data use, Ethical issues in public-private partnerships and infrastructure projects, Framework for ethical decision making.

Textbooks:
T1. Constitution of India – Government of India
T2. R. K. Arora – *Ethics in Governance*
T3. Mike Jenks & Colin Jones – *Dimensions of the Sustainable City*

Reference books:
R1. UN-Habitat – *Urban Planning for Sustainable Development* Government of India – National Urban Policy and Planning Documents

Gaps in the syllabus (to meet Industry/Profession requirements): Nil

POs met through Gaps in the Syllabus: Nil

Topics beyond syllabus/Advanced topics/Design: Nil

POs met through Topics beyond syllabus/Advanced topics/Design: Nil

Course Delivery methods
Lecture by use of boards/LCD projectors/OHP projectors
Tutorials/Assignments
Seminars
Mini projects/Projects
Laboratory experiments/teaching aids
Industrial/guest lectures
Industrial visits/in-plant training
Self- learning such as use of NPTEL materials and internets
Simulation

Course Outcome (CO) Attainment Assessment tools & Evaluation procedure

Direct Assessment

Assessment Tool	% Contribution during CO Assessment
Quiz I	10
Quiz II	10

Quiz III	10
End Sem Examination Marks	50
Assignment	10
Seminar	10

Assessment Components	**CO1**	**CO2**	**CO3**	**CO4**
Quiz I	√	√	√	√
Quiz II	√	√	√	√
Quiz III	√	√	√	√
End Sem Examination	√	√	√	√
Assignment	√	√	√	√
Seminar	√	√	√	√

Indirect Assessment –

1. Student Feedback on Faculty
2. Student Feedback on Course Outcome

Mapping between Objectives and Outcomes

Mapping of Course Outcomes onto Program Outcomes

Course Outcome #	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**
CO 1	2	1	1	2	1	2
CO 2	2	2	2	2	2	2
CO 3	2	1	1	1	2	2
CO 4	3	2	3	2	2	3

Mapping Between COs and Course Delivery (CD) methods			
CD	**Course Delivery methods**	**Course Outcome**	**Course Delivery Method**
CD1	Lecture by use of boards/LCD projectors/OHP projectors	CO1	CD1, CD2, CD3
CD2	Tutorials/Assignments	CO2	CD1, CD2, CD3
CD3	Seminars	CO3	CD1, CD2, CD3
CD4	Mini projects/Projects	CO4	CD1, CD2, CD3
CD5	Laboratory experiments/teaching aids		
CD6	Industrial/guest lectures		
CD7	Industrial visits/in-plant training		
CD8	Self- learning such as use of NPTEL materials and internet		
CD9	Simulation		

Lecture wise Lesson planning Details.

Week	Lect.	Ch.	Topics to be covered	Text	COs	Methodology	Remarks

No.	No.	No.		Book / References	mapped	used	by faculty if any
1	L1	1	Meaning and nature of ethics, morality, and values	T2	1	PPT Digi Class/Chalk -Board	
1	L2	1	Types of values: personal, social, professional and environmental values	T2	1	PPT Digi Class/Chalk -Board	
2	L3	1	Importance of ethics in professional education and planning practice.	T2	1	PPT Digi Class/Chalk -Board	
2	L4	2	Ethical theories: Utilitarianism, Deontology, Virtue ethics	T2	1	PPT Digi Class/Chalk -Board	
3	L5	2	Human values in public life: Integrity, Honesty, Accountability, Empathy	T2	1	PPT Digi Class/Chalk -Board	
3	L6	2	Ethical dilemmas in urban governance and development	T2	1	PPT Digi Class/Chalk -Board	
4	L7	3	Human-centered planning and inclusive development, social justice in planning practice, Equity and fairness in resource allocation	T2	2	PPT Digi Class/Chalk -Board	
4	L8	3	Ethics in: Land use planning, Housing policies, Infrastructure development	T2, T3	2	PPT Digi Class/Chalk -Board	
5	L9	3	Stakeholder participation and community engagement	T2, T3	2, 4	PPT Digi Class/Chalk -Board	
5	L10	3	Environmental ethics and sustainable development	T2, T3	2, 4	PPT Digi Class/Chalk -Board	
6	L11	3	Ethics in planning decisions affecting vulnerable communities (slums, informal settlements, tribal areas).	T2, T3	2, 4	PPT Digi Class/Chalk -Board	
6	L12	4	Philosophy and basic features of the Constitution of India	T1	3	PPT Digi Class/Chalk -Board	
7	L13	4	Constitutional values:	T1	3	PPT Digi	

			Justice (social, economic, political), Liberty, Equality, Fraternity			Class/Chalk -Board	
7	L14	4	Fundamental Rights, Directive Principles of State Policy	T1	3	PPT Digi Class/Chalk -Board	
8	L15	4	Fundamental Duties of citizens	T1	3	PPT Digi Class/Chalk -Board	
8	L16	4	Transparency, accountability and rule of law in planning administration	T1	3	PPT Digi Class/Chalk -Board	
9	L17	5	Professional ethics in planning and public service	T2, T3, R1	4	PPT Digi Class/Chalk -Board	
9	L18	5	Codes of ethics for planners and public administrators	T2, T3, R1	4	PPT Digi Class/Chalk -Board	
10	L19	5	Corruption, conflict of interest and misuse of authority, Ethical leadership in urban governance	T2, T3, R1	4	PPT Digi Class/Chalk -Board	
10	L20	5	Ethics in smart cities, digital governance and data use	T2, T3, R1	4	PPT Digi Class/Chalk -Board	
11	L21	5	Ethical issues in public-private partnerships and infrastructure projects,	T2, T3, R1	4	PPT Digi Class/Chalk -Board	
11	L22	5	Framework for ethical decision making	T2, T3, R1	4	PPT Digi Class/Chalk -Board	

COURSE INFORMATION SHEET

Course code: **ARP 26655**
Course title: **Urban & Regional Infrastructure**
Pre-requisite(s): None
Co- requisite(s): None
Credits: 02 L: 2 T:0 P:0
Class schedule per week: 2
Class: M. Plan
Semester / Level: II
Branch: Architecture and Planning
Name of Teacher: Dr. Shama Parween

Course Objectives

This course enables the students:

A.	To develop an understanding of different types of critical infrastructure required for regional development, including land development for mega projects such as dams and irrigation systems.
B.	To familiarize students with infrastructure related to agriculture and public welfare, including agricultural markets and the public distribution system.
C.	To enhance knowledge of social infrastructure, such as health and education systems, that support regional development.
D.	To introduce spatial and physical infrastructure systems, including Land Information Systems (LIS), energy networks, and transportation infrastructure such as roads and railways.

Course Outcomes

After the completion of this course, students will be able to:

CO1.	Explain the concept, components, and importance of critical infrastructure systems and their role in regional and national development.
CO2.	Analyze the interrelationships between physical, social, and economic infrastructure such as irrigation systems, agricultural markets, health, education, energy, and transportation networks.
CO3.	Evaluate the role of spatial and information systems, including Land Information Systems (LIS), in planning, management, and decision-making for infrastructure development.
CO4.	Assess the impact of major infrastructure projects and public service systems on regional growth, resource management, and societal well-being.
CO5.	Apply integrated knowledge of infrastructure systems to understand planning, development, and management challenges in regional contexts.

Syllabus

Module 1: Infrastructure Management: Planning Issues
Equity and access to infrastructure services; service levels and efficiency; quality of service delivery; affordability and paying capacity of users; pricing of infrastructure services;

ownership and control structures including public, private, Special Purpose Vehicle (SPV), and Public–Private Partnership (PPP) models; mechanisms for infrastructure provision; roles and functioning of multi-service providers at different administrative levels; infrastructure policy frameworks including regulatory and facilitative approaches; investment requirements across various levels and the status of actual infrastructure investments; and assessment through infrastructure indices.

Module 2: Role and Functions of Infrastructure in an Urban and Regional Scale
Role of infrastructure in urban and regional development; identification and significance of critical infrastructure and its indicators in assessing regional development; standards and benchmarks for infrastructure provision and service delivery at different levels; application of spatial information technologies in planning, provision, and monitoring of infrastructure; and regional resource mapping, including forest, mineral, agricultural, and water resources.

Module 3: Physical Infrastructure
Water and sanitation policies and programmes, including urban–rural variations in water supply and sanitation services; multiple demands for water in rural areas, such as domestic use and irrigation, along with issues of demand, supply, and pricing. Policies and programmes for sanitation provision at different levels, including the **Rajiv Gandhi Technology Mission on Water Supply and Sanitation (Urban and Rural),** City Sanitation Plans, and State Sanitation Strategies. Sanitation in relation to the Millennium Development Goals (MDGs), resource commitments, and access in terms of cost and coverage. Roles of institutions—public, private, and community—in sanitation management. Linkages between sanitation, environment, and public health. Solid and liquid waste management in both urban and rural areas, including policies, collection, treatment, and disposal systems, along with associated environmental concerns.

Module 4: Social and Economic Infrastructure
Health infrastructure: provisions, availability, accessibility, future requirements, and government policies; education infrastructure including provisions, access, future demand, and policy frameworks; socio-cultural and recreational infrastructure and related policies; agriculture extension centres; agricultural marketing and storage facilities; banking and insurance services; tourism infrastructure including ports, airports, inland waterways, and Special Economic Zones (SEZ); and the role of energy and digital infrastructure in supporting regional development

Module 5: Transport and Strategic Infrastructure
Road infrastructure including provision, institutions involved, investment, pricing, maintenance, access, coverage, and condition; national, state, and district road policies; major national highway projects such as the Golden Quadrilateral and the North–South and East–West Corridors and their impacts on regional spatial development; Pradhan Mantri Gram Sadak Yojana (PMGSY) and its role in improving village connectivity; the role of the Border Roads Development Organisation (BRDO) in border and international road development and connectivity in backward regions; regional disparities in road provision; railway infrastructure including freight and passenger transport, dry ports, container depots, high-speed connectivity, metro systems, and supply projections; issues of investment and pricing; trans-boundary issues in energy production and sharing; privatization concerns; and nuclear energy development and its potential spatial impacts.

Text books:

1. Sethi V.K. (2007). Infrastructure Development in India. New Century Publications, New Delhi.
2. Ministry of Urban Development (2011). Report on Indian Urban infrastructure and Services. The High-Powered Expert Committee (HPEC) for Estimating the Investment Requirements for Urban Infrastructure Services, Government of India.
3. National Institute of Urban Affairs (1997). Financing Urban Infrastructure in India: Research Study Series 59. NIUA, New Delhi.
4. Venugopal R.A. (2009). State of Urban services in Indian cities. Oxford University Press, New Delhi.

Reference books:

1. Ministry of Urban Affairs & Employment (2014). Urban & regional Development Plans Formulation and Implementation Guidelines. Government of India, New Delhi.
2. McLoughlin Brian J. (2019). Urban and Regional Planning: A Systems Approach. Rawat Publications, New Delhi.
3. Heathcott Joseph, Jonathan Soffer and Rae Zimmerman (2022). Urban Infrastructure: Historical and Social Dimensions of an Interconnected World. University of Pittsburgh Press, Pennsylvania.
4. Rana Muhammad Ehsan and Manoj Jayabalan (2023). Emerging Technologies for Digital Infrastructure Development. Bentham Books, Sharjah.

Gaps in the syllabus (to meet Industry/Profession requirements): NA

POs met through Gaps in the Syllabus: a,d,e,f

Topics beyond syllabus/Advanced topics/Design: Nil

POs met through Topics beyond syllabus/Advanced topics/Design

Course Delivery methods
Lecture by use of boards/LCD projectors/OHP projectors
Tutorials/Assignments
Seminars
Mini projects/Projects
Laboratory experiments/teaching aids
Industrial/guest lectures
Industrial visits/in-plant training
Self- learning such as use of NPTEL materials and internets
Simulation

Course Outcome (CO) Attainment Assessment tools & Evaluation procedure

Direct Assessment

Assessment Tool	% Contribution during CO Assessment
Quiz I	10
Quiz II	10
Quiz III	10

End Sem Examination Marks	50
Assignment	10
Seminar	10

Assessment Components	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**
Quiz I	✓	✓	✓	✓	✓
Quiz II	✓	✓	✓	✓	✓
Quiz III	✓	✓	✓	✓	✓
End Sem Examination	✓	✓	✓	✓	✓
Assignment	✓	✓	✓	✓	✓
Seminar	✓	✓	✓	✓	✓

Indirect Assessment –

1. Student Feedback on Faculty
2. Student Feedback on Course Outcome

Mapping between Objectives and Outcomes

Mapping of Course Outcomes onto Program Outcomes

Course Outcome #	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**
CO 1	3	3	1	1	2	1
CO 2	2	3	3	1	1	1
CO 3	3	2	1	3	3	1
CO 4	3	1	1	1	3	2
CO 5	1	1	3	3	1	3

Mapping Between COs and Course Delivery (CD) methods			
CD	**Course Delivery methods**	**Course Outcome**	**Course Delivery Method**
CD1	Lecture by use of boards/LCD projectors/OHP projectors	1,2,3,4,5	
CD2	Tutorials/Assignments	3,4,5	
CD3	Seminars	2,3,5	
CD4	Mini projects/Projects	NA	
CD5	Laboratory experiments/teaching aids	NA	
CD6	Industrial/guest lectures	4	
CD7	Industrial visits/in-plant training	NA	
CD8	Self- learning such as use of NPTEL materials and internet	1,2,3,4,5	
CD9	Simulation	NA	

Lecture wise Lesson planning Details.

Week No.	Lect. No.	Ch. No.	Topics to be covered	TextBook / References	COs mapped	Methodology used	Remarks by faculty
1	L1	1	Equity and access to		1	PPT Digi	

			infrastructure services; service levels and efficiency; quality of service delivery			Class /Chalk -Board	
2	L2	1	Affordability and paying capacity of users; pricing of infrastructure services; ownership and control structures including public, private, Special Purpose Vehicle (SPV), and Public–Private Partnership (PPP) models		1,2,3	PPT Digi Class /Chalk -Board	
3	L3	1	Mechanisms for infrastructure provision; roles and functioning of multi-service providers at different administrative levels; infrastructure policy frameworks including regulatory and facilitative approaches		1,2,3	PPT Digi Class /Chalk -Board	
4	L4	1	Investment requirements across various levels and the status of actual infrastructure investments; and assessment through infrastructure indices.		4,5	PPT Digi Class /Chalk -Board	
5	L5	2	Role of infrastructure in urban and regional development; identification and significance of critical infrastructure and its indicators in assessing regional development		4	PPT Digi Class /Chalk -Board	
6	L6	2	Standards and benchmarks for infrastructure provision and service delivery at different levels;		1	PPT Digi Class /Chalk -Board	
7	L7	2	Application of spatial information technologies in planning, provision, and monitoring of infrastructure; and regional resource mapping, including forest, mineral, agricultural, and water resources.		3	PPT Digi Class /Chalk -Board	
8	L8	3	Water and sanitation policies and programmes, including urban–rural		2,4	PPT Digi Class /Chalk -Board	

			variations in water supply and sanitation services; multiple demands for water in rural areas, such as domestic use and irrigation, along with issues of demand, supply, and pricing				
9	L9	3	Policies and programmes for sanitation provision at different levels, including the Rajiv Gandhi Technology Mission on Water Supply and Sanitation (Urban and Rural), City Sanitation Plans, and State Strategies.		1,5	PPT Digi Class /Chalk -Board	
10	L10	3	Roles of institutions—public, private, and community—in sanitation management. Linkages between sanitation, environment, and public health.		1,5	PPT Digi Class /Chalk -Board	
11	L11	3	Solid and liquid waste management in both urban and rural areas, including policies, collection, treatment, and disposal systems, along with associated environmental concerns.		2,3	PPT Digi Class /Chalk -Board	
12	L12	4	Health infrastructure: provisions, availability, accessibility, future requirements, and government policies		2,3,4	PPT Digi Class /Chalk -Board	
13	L13	4	Education infrastructure including provisions, access, future demand, and policy frameworks; socio-cultural and recreational infrastructure		2,3,4	PPT Digi Class /Chalk -Board	
14	L14	4	Agriculture extension centres; agricultural marketing and storage facilities; banking and insurance services; tourism infrastructure including ports, airports, inland waterways, and Special		1,2	PPT Digi Class /Chalk -Board	

			Economic Zones (SEZ)				
15	L15	4	Role of energy and digital infrastructure in supporting regional development		1,2,4	PPT Digi Class /Chalk -Board	
16	L16	5	Road infrastructure including provision, institutions involved, investment, pricing, maintenance, access, coverage, and condition;		2,4	PPT Digi Class /Chalk -Board	
17	L17	5	National, state, and district road policies; major national highway projects such as the Golden Quadrilateral and the North–South and East–West Corridors and their impacts on regional spatial development		2,4	PPT Digi Class /Chalk -Board	
18	L18	5	Pradhan Mantri Gram Sadak Yojana (PMGSY) and its role in improving village connectivity; the role of the Border Roads Development Organisation (BRDO) in border and international road development and connectivity in backward regions;		1,2,5	PPT Digi Class /Chalk -Board	
19	L19	5	Railway infrastructure including freight and passenger transport, dry ports, container depots, high-speed connectivity, metro systems, and supply projections; issues of investment and pricing		2,3	PPT Digi Class /Chalk -Board	
20	L20	5	Trans-boundary issues in energy production and sharing; privatization concerns; and nuclear energy development and its potential spatial impacts		2,3,5	PPT Digi Class /Chalk -Board	

COURSE INFORMATION SHEET

Course code: **ARP 26656**
Course title: **Transport Corridors and Regional Development**
Pre-requisite(s): None

Co- requisite(s): None
Credits: 02 L: 2 T: 0 P: 0
Class schedule per week: 02
Class: M. Plan
Semester / Level: II
Branch: Architecture & Planning
Name of Teacher: Dr. Prashant Prasad

Course Objectives

This course enables the students:

A.	To understand the concept of transport corridors and their role in shaping urban and regional development.
B.	To understand the relationship between transport infrastructure, accessibility, and spatial development patterns.
C.	To develop knowledge of land use–transport interaction and analytical models used in corridor planning
D.	To appreciate the traffic and development impacts of large-scale land development and corridor-based growth.
E.	To understand governance, logistics systems, and policy frameworks guiding corridor-led regional development.

Course Outcomes

After the completion of this course, students will be able to:

CO1.	Understand the role of transport corridors in influencing regional development and spatial restructuring.
CO2.	Analyse the relationship between accessibility, land use patterns, and mobility along development corridors.
CO3.	Apply basic land use–transport interaction concepts and models in corridor planning contexts.
CO4.	Assess the traffic and development impacts of land use changes and major infrastructure corridors.
CO5.	Evaluate governance, logistics, and policy mechanisms supporting corridor-based regional development.

Syllabus

Module 1: Concept of Transport Corridors and Regional Development
Concept of corridor development and its role in shaping urban and regional growth; Types of corridors: transport corridors, economic corridors, industrial corridors, logistics corridors and investment corridors; Influence of national highways, expressways and multimodal transport systems on regional development; Growth drivers of corridor development and emergence of growth nodes and growth foci; Relationship between transport corridors and regional spatial structure; Role of corridors in enhancing regional accessibility and economic competitiveness.

Module 2: Land Use – Transport Integration in Urban and Regional Planning
Land use and mobility patterns in cities; Implications of land use patterns on transport and mobility; Land use and transport decisions in urban and regional planning; Need for sustainable development and sustainable transport systems; Need and benefits of land use–

transport integration; Integration of land use planning with transport infrastructure and mobility systems; Case cities illustrating land use–transport integration.

Module 3: Principles and Models of Land Use – Transport Interaction
Concept and definition of land use–transport integration; Land use–transport cycle and importance of accessibility; Factors affecting land use–transport interaction; Tools and key elements for land use–transport integration; Integrating land use and transport in the planning process; Institutional integration and legal mechanisms; Components of land use–transport models; Accessibility concepts, measures and quantification; Types of land use–transport models including density saturation gradient method, Hansen's accessibility model, intervening opportunity model, Garin–Lowry model, and strategic land use–transport models.

Module 4: Traffic Impact of Land Development
Principles of traffic impact analysis; Land development attributes; Traffic generation rates for different land uses; Impacts of land development on traffic congestion on road segments, intersections and parking; Impact on public transport systems, pedestrian movement and safety; Planning measures for mitigating traffic impacts in corridor development areas.

Module 5: Corridor Governance, Logistics Systems, and Regional Development
Concept of economic and logistics corridors and their role in regional competitiveness; Multimodal freight corridors, logistics hubs, and industrial corridors; Corridor-led regional development strategies and emergence of growth centres; Institutional and governance frameworks for corridor planning and management; Financing mechanisms and public–private partnerships in corridor development; Role of transport corridors in regional trade, investment flows, and spatial restructuring; National and international case studies of corridor-based regional development.

Text books:

1. Kadiyali, L. R. (2014). Traffic Engineering and Transport Planning. Khanna Publishers, New Delhi.
2. Vuchic, V. R. (2005). Urban Transit: Operations, Planning & Economics. John Wiley & Sons.
3. O'Flaherty Coleman A. (1997). Transport Planning and Traffic Engineering. CRC Press, Taylor and Francis Group.
4. Mitchell, R. B. & Rapkin, C. (1954). Urban Traffic: A Function of Land Use. Columbia University Press.
5. Rodrigue, J.-P., Comtois, C., & Slack, B. (2006). The Geography of Transport Systems. Routledge.

Reference books:

1. Ministry of Housing and Urban Affairs (2017). National Transit Oriented Development (TOD) Policy, 2017. Government of India, New Delhi.
2. Prabir De and Kavita Iyengar (2014). Developing Economic Corridors in South Asia. Asian Development Bank, Manila.
3. United Nations Human Settlements Programme (2015). The Role of Transport and Transit Corridors in Fostering International Cooperation for Sustainable Development: Issues and Recommendations. UN-HABITAT, Nairobi.
4. Pokhrel Ramesh, Bertolini Luca and Brommelstroet te Marco (2023). How does transportation facilitate regional economic development? A heuristic Mapping of the literature. Elsevier, Amsterdam.

5. Luis Enrique Ramos-Santiago (2023). Enhancing station level Direct-Demand models with Multi-Scalar accessibility indicators. Elsevier, Amsterdam.
6. UN-OHRLLS (2020). Effective Transit Transport Corridor Development and Management: Report on Best Practices. Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States. New York.
7. Jivan J. (2021). Regional Development and Planning. Rawat Publications, New Delhi.
8. Hilal Yildirik Keser (2015). Importance of Transport Corridors in Regional Development: The Case of TRACECA. Sosyoekonomi.
9. Raballand Gaël, Jean-Francois Marteau, Charles Kunaka, Jean-Kizito Kabanguka and Oliver Hartmann (2008). Lessons of Corridor Performance Measurement. Published web: https://gtkp.com/knowledge/lessons-of-corridor-performance-measurement/

Gaps in the syllabus (to meet Industry/Profession requirements)

POs met through Gaps in the Syllabus

Topics beyond syllabus/Advanced topics/Design

POs met through Topics beyond syllabus/Advanced topics/Design

Course Delivery methods
Lecture by use of boards/LCD projectors/OHP projectors
Tutorials/Assignments
Seminars
Mini projects/Projects
Laboratory experiments/teaching aids
Industrial/guest lectures
Industrial visits/in-plant training
Self- learning such as use of NPTEL materials and internets
Simulation

Course Outcome (CO) Attainment Assessment tools & Evaluation procedure

Direct Assessment

Assessment Tool	**% Contribution during CO Assessment**
Quiz I	10
Quiz II	10
Quiz III	10
End Sem Examination Marks	50
Assignment	10
Seminar	10

Assessment Components	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**
Quiz I	✓	✓	✓	✓	✓
Quiz II	✓	✓	✓	✓	✓
Quiz III	✓	✓	✓	✓	✓

End Sem Examination	✓	✓	✓	✓	✓
Assignment	✓	✓	✓	✓	✓
Seminar	✓	✓	✓	✓	✓

Indirect Assessment –

1. Student Feedback on Faculty
2. Student Feedback on Course Outcome

Mapping between Objectives and Outcomes

Mapping of Course Outcomes onto Program Outcomes

Course Outcome #	Program Outcomes					
	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	2	2	1	2	1
CO 2	2	3	2	2	2	1
CO 3	3	3	2	2	1	1
CO 4	2	3	2	2	2	1
CO 5	3	2	3	1	3	2

Mapping Between COs and Course Delivery (CD) methods			
CD	Course Delivery methods	Course Outcome	Course Delivery Method
CD1	Lecture by use of boards/LCD projectors/OHP projectors	CO1	CD1
CD2	Tutorials/Assignments	CO2	CD1
CD3	Seminars	CO3	CD1 and CD2
CD4	Mini projects/Projects		
CD5	Laboratory experiments/teaching aids		
CD6	Industrial/guest lectures		
CD7	Industrial visits/in-plant training		
CD8	Self- learning such as use of NPTEL materials and internets		
CD9	Simulation		

Lecture wise Lesson planning Details.

Week No.	Lect. No.	Module. No.	Topics to be covered	Text Book / References	COs mapped	Methodology used	Remarks by faculty
1	L1	1	Introduction to transport corridors: concept, scope, objectives and importance	T1	1	PPT Digi Class/Chalk-Board	
1	L2	1	Role of transport corridors in urban and regional development	T1	1	PPT Digi Class/Chalk-Board	

2	L3	1	Types of corridors: transport corridors, economic corridors, industrial corridors	T1	1	PPT Digi Class/Chalk-Board	
2	L4	1	Logistics corridors, investment corridors and multimodal transport corridors	T1	1	PPT Digi Class/Chalk-Board	
3	L5	1	Influence of national highways and expressways on regional development	T1	1	PPT Digi Class/Chalk-Board	
3	L6	1	Growth drivers of corridor development; emergence of growth nodes and growth foci	T1	1	PPT Digi Class/Chalk-Board	
4	L7	2	Land use and mobility patterns in cities and regions	T2	2	PPT Digi Class/Chalk-Board	
4	L8	2	Implications of land use patterns on transport and mobility	T2	2	PPT Digi Class/Chalk-Board	
5	L9	2	Land use and transport decisions in urban and regional planning	T2	2	PPT Digi Class/Chalk-Board	
5	L10	2	Need for sustainable development and sustainable transport systems	T2	2	PPT Digi Class/Chalk-Board	
6	L11	2	Need and benefits of land use–transport integration	T2	2	PPT Digi Class/Chalk-Board	
6	L12	2	Case cities of land use–transport integration	T2, R1	2	PPT Digi Class/Chalk-Board	
7	L13	3	Concept of land use–transport interaction and integration	T3	3	PPT Digi Class/Chalk-Board	
7	L14	3	Land use–transport cycle and importance of accessibility	T3	3	PPT Digi Class/Chalk-Board	
8	L15	3	Accessibility: concept, measures and quantification	T3	3	PPT Digi Class/Chalk-Board	
8	L16	3	Factors affecting land use–transport interaction	T3	3	PPT Digi Class/Chalk-Board	
9	L17	3	Components of land use–transport models	T3	3	PPT Digi Class/Chalk-Board	
9	L18	3	Types of models: density saturation gradient, Hansen accessibility model	T3	3	PPT Digi Class/Chalk-Board	
10		3	Intervening opportunity	T3	3	PPT Digi	

	L19		model and Garin–Lowry model			Class/Chalk-Board	
10	L20	3	Strategic land use–transport models and applications in planning	T3	3	PPT Digi Class/Chalk-Board	
11	L21	4	Principles of traffic impact analysis in land development	T1	4	PPT Digi Class/Chalk-Board	
11	L22	4	Land development attributes and traffic generation rates	T1	4	PPT Digi Class/Chalk-Board	
12	L23	4	Impacts of development on traffic congestion: road segments and intersections	T1	4	PPT Digi Class/Chalk-Board	
12	L24	4	Impact on parking, pedestrian movement and public transport systems	T1	4	PPT Digi Class/Chalk-Board	
13	L25	5	Concept of economic corridors and logistics corridors	T2	5	PPT Digi Class/Chalk-Board	
13	L26	5	Multimodal freight corridors and logistics hubs	T2	5	PPT Digi Class/Chalk-Board	
14	L27	5	Corridor-led regional development strategies and emergence of growth centres	T2	5	PPT Digi Class/Chalk-Board	
14	L28	5	Institutional and governance frameworks for corridor planning	T2	5	PPT Digi Class/Chalk-Board	
15	L29	5	Financing mechanisms and public–private partnerships in corridor development	T2	5	PPT Digi Class/Chalk-Board	
15	L30	5	National and international case studies of corridor-based regional development	T2, R2	5	PPT Digi Class/Chalk-Board	

COURSE INFORMATION SHEET

Course code: **HS24133**
Course title: **Communication Skills II**
Pre-requisite(s): None
Co- requisite(s): None
Credits: 1.5 L: 0 T: 0 P: 3
Class schedule per week: 03
Class: M. Plan
Semester / Level: II
Branch: Architecture and Planning
Name of Teacher: Dr. Rohit Pandey

Course Objectives

This course enables the students:

A.	To improve listening comprehension and retention of spoken content.
B.	To develop fluency and coherence in oral communication.
C.	To enhance interpretative and inferential reading abilities.
D.	To foster clarity, coherence, and accuracy in writing.
	To integrate LSRW skills for academic and real-life applications.

Course Outcomes (COs)

After the completion of this course, students will be able to:

CO1.	Comprehend and retain spoken content using effective listening strategies.
CO2.	Express ideas fluently and accurately in structured speaking tasks.
CO3.	Interpret written texts with an ability to infer meaning and analyze arguments.
CO4.	Compose coherent and error-free writing suited to academic or professional contexts.
CO5.	Apply integrated LSRW skills to accomplish real-world communicative tasks.

Syllabus

Module I
Developing Listening Accuracy and Retention: This module focuses on enhancing learners' comprehension of spoken English in academic and workplace settings. Students will listen to excerpts from lectures, discussions, and presentations, identifying main ideas, supporting details, and speaker's intent. Through guided listening tasks followed by reflective exercises, they will improve their attention span and accuracy in comprehension. Note-taking strategies such as outlining, mapping, and summarizing will be practiced helping retain and organize information effectively

Module II
Improving Speaking Fluency and Confidence: Students will participate in structured speaking activities to develop fluency, pronunciation, and coherence. They will engage in dialogues, role-plays, and short extemporaneous speeches on familiar and semi-formal topics. Emphasis will be placed on turn-taking, intonation, stress patterns, and overcoming hesitation. Students will receive peer and instructor feedback to refine their clarity and delivery style.

This module will also include one formal oral presentation to build professional communication skills.

Module III

Reading for Interpretation and Inference: develops critical and analytical skills. Students will read short academic texts, articles, and essays from diverse fields. Emphasis will be placed on identifying tone, argument structure, underlying assumptions, and rhetorical devices. Comprehension tasks will move beyond factual recall to inference, synthesis, and evaluation. Vocabulary enhancement will be contextualized through guided annotation, dictionary use, and peer discussion.

Module IV

Writing with Clarity and Purpose: The focus is on constructing clear, cohesive, and audience-appropriate written content. Students will write short texts including paragraphs, summaries, formal emails, and brief reports. The module trains students in sentence structure, logical progression of ideas, and avoiding common errors. Through multiple drafting and peer review, they will learn to revise their work critically. An integrated LSRW task requiring writing based on listening and reading will conclude the module.

Module V

Integrative LSRW Project and Reflection: The module integrates all four skills through a capstone communication task. Students will work in small groups to prepare and present a short seminar on a contemporary issue, using written reports, oral presentations, and visual aids. The task includes listening to peer presentations, offering written and oral feedback, and submitting a reflective journal on their learning experience. This module emphasizes teamwork, planning, and real-world communication competence.

Textbooks:

1) Communication Skills (2015) 2nd edition, Sanjay Kumar & Pushp Lata, Oxford University Press

2) Business Correspondence and Report Writing (2017), R.C.Sharma, Krishna Mohan. McGraw Hill

Reference Books:

1) Basic Business Communication-(2004). Lesikar I Flatley, McGraw Hill

2) Business Communication Today, (2017), Bovee, Thill and Chatterjee, Pearson

3) Krishnan, M, & Jha, S.(2024). *Focus: A course in Communication Skills*. Cambridge University Press

4) Suparna Dutta, 2013 Business Communication, PHI Learning Pvt Ltd, New Delhi

Gaps in the syllabus (to meet Industry/Profession requirements): nil

POs met through Gaps in the Syllabus: Nil

Topics beyond syllabus/Advanced topics/Design: Nil

POs met through Topics beyond syllabus/Advanced topics/Design: Nil

Course Delivery Methods:

CD1	Lecture by use of boards/LCD projectors/OHP projectors	✔
CD2	Assignments/Seminars	✔

CD3	Laboratory experiments/teaching aids	✔
CD4	Industrial/guest lectures	
CD5	Industrial visits/in-plant training	
CD6	Self- learning, such as the use of NPTEL materials and the internet	✔
CD7	Simulation	

DIRECT ASSESSMENT

Assessment Tool	**% Contribution during CO Assessment**
Continuous Internal Assessment	60
End Semester exams	40

Continuous Internal Assessment	% Distribution
Day-to-day performance & assignments	30
Quiz 1	10
Viva- Voce	20

End Semester Examination	% Distribution
Examination: Submission of reports	30
Viva- Voce	10

Assessment Components	**CO1**	**CO2**	**CO 3**	**CO 4**	**CO 5**
Continuous Internal Assessment	✔	✔	✔	✔	✔
Examination: Submission of reports	✔	✔	✔	✔	✔

MAPPING BETWEEN COURSE OUTCOMES AND COURSE DELIVERY METHOD

Course Outcomes	**Module**	**Delivery Mode**
CO 1	I	Audio-based listening tasks Guided note-taking sessions Reflective listening exercises
CO 2	II	Dialogues and role-plays Peer interaction & group speaking Instructor-guided oral presentations
CO 3	III	Close reading sessions Vocabulary contextualization Discussion and written interpretation
CO 4	IV	Writing workshops Draft–review–revise activities Individual assignments (email, report, summary)
CO 5	V	Group project and presentations Integrated tasks (listen–read–write) Reflective journal writing

COURSE INFORMATION SHEET

Course code: **ARP 26661**
Course title: **Planning Studio - Development Planning**
Pre-requisite(s): None
Co- requisite(s): None
Credits: 06 L: 0 T: 0 P: 12
Class schedule per week: 12
Class: M. Plan
Semester / Level: II
Branch: Architecture and Planning
Name of Teacher: Dr. Tiwari Pavan Kumar, & Dr. Rewati Raman

Course Objectives

This course enables the students:

A.	To introduce students to requirements of urban and peri-urban planning and develop land-use interaction studies culminating in a development plan;
B.	To train the students in applied GIS based on the case study selected.
C.	To inculcate evidence-based decision-making abilities among students for the formation of project proposals, resulting in overall socio-economic improvement and development of an area.

Course Outcomes

After the completion of this course, students will be able to:

CO1.	Analyse the existing baseline situation of the delineated planning area
CO2.	Identify sectoral issues and challenges of development
CO3.	Forecast and develop scenarios for the future growth of planning areas.
CO4.	Utilise efficient proposals for the planning of projected future development.

Syllabus

Integrated Urban Development Plan/ Master Plan, involving around 2 weeks of field survey.

1. Theories and principles of urban development plan and preparation for survey and data collection.
2. Field survey of the study area.
3. Analysis of data and information based on the inter-linkages between the core and the periphery, sectoral links, resource flow, etc.
4. Planning for urban area and its region (structure plan / Development plan) with emphasis on:
   • Land use plan implementation.
   • Project identification in various urban sectors for urban growth.
   • Capital budgeting, spatial budgeting and financing.
   • Administrative and management schemes for implementation.

Textbooks:
T1 - Kevin Lynch, Good City Form, MIT Press

T2 - Design of Cities, Penguin Publishers

Reference books:

R1. Ministry of Housing and Urban Affairs. (1992). 74th Constitutional Amendment Act. Government of India, New Delhi.
R2. Ministry of Panchayati Raj. (1992). 73rd Constitutional Amendment Act. Government of India, New Delhi.
R3. Ministry of Urban Affairs & Employment (2014). Urban & regional Development Plans Formulation and Implementation Guidelines. Government of India, New Delhi.
R4. Ministry of Panchayati Raj (2012). RADFPI Guidelines for Gram Panchayats. Government of India. New Delhi.
R5. Ministry of Rural Development (2015). Shyama Prasad Mukerjee Rurban Mission. Government of India, New Delhi.
R6 - Various City Development Plans under JNNURM & AMRUT
R7 - Gallant Robinson, Neighbourhood Planning: Communities, Networks and Governance, Policy Press

Gaps in the syllabus (to meet Industry/Profession requirements): Nil

POs met through Gaps in the Syllabus: Nil

Topics beyond syllabus/Advanced topics/Design: Nil

POs met through Topics beyond syllabus/Advanced topics/Design: Nil

Course Delivery methods
Lecture by use of boards/LCD projectors/OHP projectors
Tutorials/Assignments
Seminars
Mini projects/Projects
Laboratory experiments/teaching aids
Industrial/guest lectures
Industrial visits/in-plant training
Self- learning such as use of NPTEL materials and internets
Simulation

Course Outcome (CO) Attainment Assessment tools & Evaluation procedure

Direct Assessment

Assessment Tool	% Contribution during CO Assessment
Progressive Evaluation	50
End Sem Examination	50

Assessment Components	CO1	CO2	CO3	CO4
Progressive Evaluation	√	√	√	√
End Sem Evaluation	√	√	√	√

Indirect Assessment –

1. Student Feedback on Faculty
2. Student Feedback on Course Outcome

Mapping between Objectives and Outcomes

Mapping of Course Outcomes onto Program Outcomes

Course Outcome #	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	1	2	2	3	2	1
CO 2	3	2	3	3	3	1
CO 3	1	2	3	2	3	1
CO 4	3	3	3	2	3	1

Mapping Between COs and Course Delivery (CD) methods			
CD	**Course Delivery methods**	**Course Outcome**	**Course Delivery Method**
CD1	Lecture by use of boards/LCD projectors/OHP projectors	CO3	CD1
CD2	Tutorials/Assignments	CO1, CO2, CO4	CD1
CD3	Seminars		CD1 and CD2
CD4	Mini projects/Projects		
CD5	Laboratory experiments/teaching aids		
CD6	Industrial/guest lectures		
CD7	Industrial visits/in-plant training	CO1	CD1 and CD2
CD8	Self- learning such as use of NPTEL materials and internet		
CD9	Simulation	CO4	CD1 and CD2

Lecture wise Lesson planning Details.

Week No.	Lect. No.	Topics to be covered	TextBook / References	COs mapped	Methodology used	Remarks by faculty
1-2	L1-L12	Field trip for 2 weeks	T2, R1	1, 2	PPT Digi Class/Chalk -Board	
3-4	L13-L24	Data collection & processing	T2, R1	1, 2	PPT Digi Class/Chalk-Board	
5	L25	Internal evaluation				
5-9	L26-L54	Preliminary Data analysis	T2, R1	1, 2,3	PPT Digi Class/Chalk -Board	
9	L55	Internal evaluation				
10-13	L56-L78	Final analysis and report writing	T1,2. R1,2.	3,4	Computerised formats and hard copy report	
14		Internal evaluation				

SEMESTER III

COURSE INFORMATION SHEET

Course code: **ARP 26711**
Course title: **District Planning and Rural Development**
Pre-requisite(s): None
Co- requisite(s): None
Credits: 03 L: 3 T:0 P:0
Class schedule per week: 3
Class: M. Plan
Semester / Level: III
Branch: Architecture and Planning
Name of Teacher: Dr. Rajan Chandra Sinha

Course Objectives

This course enables the students:

A.	to understand the administrative dimensions of spatial planning in India managed from the state to gram panchayat through district planning process.
B.	to understand various spatial districts planning being done in India and how various institutions are involved in the development process including budget preparations.
C.	to understand the concept of spatial budgeting and its interface with DDP
D.	to understand the RUBAN Mission, RADFPI, SVAMITV A and other Gram Panchayat area's spatial development planning.
E.	to understand various development programmes and projects at district and gram panchayat levels are carried.

Course Outcomes

After the completion of this course, students will be able to:

CO1.	to appreciate the various hierarchies of District planning, budgeting and various government programmes and projects
CO2.	to appreciate the spatial rural development and their programmes and model spatial developments

Syllabus

Module 1: Introduction
Decentralised Planning in India: Historical Development in decentralized district level planning: District and Block Planning; 73rd and 74th Constitutional Amendment Acts; Participative District Planning, Role of Planning Commission and an Overview of District Planning Manual of Planning Commission of India; Finance Commissions, and ICT in District Planning.

Module 2: District Planning-I
Data Management and District Level Visioning; Institutional and other support for District Planning Committee; Bridging gap through district planning, resource mapping and determination of funding sources; Consolidation of urban and rural plans; multi-sector and multi-level integrated approach to planning (vertical and horizontal spatial integration); Rural-urban spatial relationship.

Module 3: District Planning-II
District Development Plans: Guidelines for District Planning: Content, context and methodologies; Village Development Plans: an integrated approach, rural norms and standards (spatial); Capacity Building for Decentralised Planning; Democratising information: using media for district development; Special Component Plan: Tribal Sub Plan and weaker Sector Plan allocation, Direct Cash Transfer, Affirmative Action etc., implementation, monitoring and evaluation; North-Eastern Plan.

Module 4: Rural Planning and Development
Introduction: Meaning, Scope and overview of rural development; Historical perspective Rural Development Programmes in India, Problem/perception and identification; Rural Area Planning: Programmes/Policies/ Schemes for rural development, their coverage and outcomes; Rural Infrastructure Development Schemes; Rural Employment Schemes; Digital Inclusion for beneficiaries; Micro financing (SHGs): Sustainable Livelihood; Programmes: Command Area Programme, Drought Prone Area Programme, Backward Area Development Programme, North Eastern Development Programme etc.; Technology Missions: Water, Sanitation, etc.

Module 5: Transforming Rural Areas of India
Consumption pattern changes, land utilization changes, cropping pattern changes, holding size change, living standard changes, changes in asset ownership: its implication in the planning process; Aspirational Districts and Blocks, Smart Villages.

Textbooks:
T1.Singh K. and A. Shisodia (2016). Rural Development Principles, Pollcies, and Management. Sage Publication, New Delhi.
T2. Chopra K., G. K. Kadekodi and M. N. Murthy. (1990). Participatory development people and common property resources. Sage Publication, New Delhi.
T3. Jin L., Qian, G. and Yan, W. (2012). Industry-city Integrate Development Oriented High-tech District Development and Planning Strategies: Jinan East High-tech District Case.
T4. Lckorwe M.H. (1998). Local government and district planning. JL Van, Schaik.
T5. lnamdar N.R. and Kshire, V.K. (1986). District Planning in India: A Case Study of Maharashtra, IBH Publishing Company, Oxford.
T6. Thakur D. and Singh, S.N. (1991). District Planning and Panchayati Raj. Deep and Deep Publications, Delhi.
T7. Yugandhar B.N. and Mukherjee, A. (1991). Readings in Decentralised Planning with Special Reference to District Planning, Vol. 1. Concept Publishing Company, Delhi.
T8. Hooja R. and Mathur, P.C. (1991). District and Decentralized Planning. Rawat Publications, New Delhi.
T9. Planning Commission India. (2008). Manual for Integrated District Planning, Government of India.
T10. UNDP. (2020). Aspirational Districts Programme: An Appraisal, United Nation Development Programme. India Office, New Delhi.

Reference books:
R1 - RADPFI guidelines.
R2- MoPR Reports and Guidelines

Gaps in the syllabus (to meet Industry/Profession requirements): Nil

POs met through Gaps in the Syllabus: Nil

Topics beyond syllabus/Advanced topics/Design: Nil

POs met through Topics beyond syllabus/Advanced topics/Design: Nil

Course Delivery methods
Lecture by use of boards/LCD projectors/OHP projectors
Tutorials/Assignments
Seminars
Mini projects/Projects
Laboratory experiments/teaching aids
Industrial/guest lectures
Industrial visits/in-plant training
Self- learning such as use of NPTEL materials and internets
Simulation

Course Outcome (CO) Attainment Assessment tools & Evaluation procedure

Direct Assessment

Assessment Tool	% Contribution during CO Assessment
Quiz I	10
Quiz II	10
Quiz III	10
End Sem Examination Marks	50
Assignment	10
Seminar	10

Assessment Components	CO1	CO2
Quiz I	√	√
Quiz II	√	√
Quiz III	√	√
End Sem Examination	√	√
Assignment	√	√
Seminar	√	√

Indirect Assessment –

1. Student Feedback on Faculty
2. Student Feedback on Course Outcome

Mapping between Objectives and Outcomes

Mapping of Course Outcomes onto Program Outcomes

Course Outcome #	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	1	2	3	1	2	1
CO 2	2	3	2	2	3	2

Mapping Between COs and Course Delivery (CD) methods			
CD	**Course Delivery methods**	**Course Outcome**	**Course Delivery Method**
CD1	Lecture by use of boards/LCD projectors/OHP projectors	CO1	CD1, CD2, CD3
CD2	Tutorials/Assignments	CO2	CD1, CD2, CD3
CD3	Seminars		
CD4	Mini projects/Projects		
CD5	Laboratory experiments/teaching aids		
CD6	Industrial/guest lectures		
CD7	Industrial visits/in-plant training		
CD8	Self- learning such as use of NPTEL materials and internet		
CD9	Simulation		

Lecture wise Lesson planning Details.

Week No.	Lect. No.	Ch. No.	Topics to be covered	Text Book / References	COs mapped	Methodology used	Remarks by faculty if any
1	L1	1	Decentralised Planning in India: Historical Development in decentralized district level planning:	T7, R2	1	PPT Digi Class/Chalk -Board	
1	L2	1	District and Block Planning; 73rd and 74th Constitutional Amendment Acts	T8, T9, R2	1	PPT Digi Class/Chalk -Board	
1	L3	1	Participative District Planning, Role of Planning Commission	T9, R2	1	PPT Digi Class/Chalk -Board	
2	L4	1	Overview of District Planning Manual of Planning Commission of India	T9, R2	1	PPT Digi Class/Chock -Board	
2	L5	1	Finance Commissions, and ICT in District Planning.	T9, R2	1	PPT Digi Class/Chalk -Board	
2	L6	2	Data Management and District Level Visioning; Institutional and other support for District Planning	T9, R2	1	PPT Digi Class/Chalk -Board	

			Committee				
3	L7	2	Bridging gap through district planning, resource mapping and determination of funding sources	T9, R2	1	PPT Digi Class/Chalk -Board	
3	L8	2	Consolidation of urban and rural plans; multi-sector and multi-level integrated approach to planning	T5, T6, T8, T9, R2	1	PPT Digi Class/Chalk -Board	
3	L9	2	Rural-urban spatial relationship	T9, R2	1	PPT Digi Class/Chalk -Board	
4	L10	3	District Development Plans: Guidelines for District Planning: Content, context and methodologies	T5, T6, T8, T9, R2	1	PPT Digi Class/Chalk -Board	
4	L11	3	Village Development Plans: an integrated approach, rural norms and standards (spatial);	T5, T6, T8, T9, R1, R2	1, 2	PPT Digi Class/Chalk -Board	
4	L12	3	Building for Decentralised Planning; Democratising information: using media for district development	T8, T9, R2	1	PPT Digi Class/Chalk -Board	
5	L13	3	Special Component Plan: Tribal Sub Plan and weaker Sector Plan allocation,	T8, T9, R2	1	PPT Digi Class/Chalk -Board	
5	L14	3	implementation, monitoring and evaluation; North-Eastern Plan.	T7, T8, T9, R2	1	PPT Digi Class/Chalk -Board	
5	L15	4	Introduction: Meaning, Scope and overview of rural development; Historical perspective Rural Development Programmes in India	T1, R2	2	PPT Digi Class/Chalk -Board	
6	L16	4	Problem/perception and identification; Rural Area Planning	T1, R2	2	PPT Digi Class/Chalk -Board	
6	L17	4	Programmes/Policies/	T1,	2	PPT Digi	

			Schemes for rural development, their coverage and outcomes	R2		Class/Chalk -Board	
6	L18	4	Rural Infrastructure Development Schemes; Rural Employment Schemes; Digital Inclusion for beneficiaries	T1, R2	2	PPT Digi Class/Chalk -Board	
7	L19	4	Micro financing (SHGs): Sustainable Livelihood; Programmes: Command Area Programme, Drought Prone Area Programme	T1, R2	2	PPT Digi Class/Chalk -Board	
7	L20	4	Backward Area Development Programme, North Eastern Development Programme etc.; Technology Missions: Water, Sanitation, etc	T1, R2	2	PPT Digi Class/Chalk -Board	
7	L21	5	Consumption pattern changes, land utilization changes, cropping pattern changes	T1, R2	2	PPT Digi Class/Chalk -Board	
8	L22	5	holding size change, living standard changes, changes in asset ownership: its implication in the planning process	T1, R2	2	PPT Digi Class/Chalk -Board	
8	L23	5	Aspirational Districts and Blocks, Smart Villages	T1, R2	2	PPT Digi Class/Chalk -Board	

COURSE INFORMATION SHEET

Course code: **ARP 26712**
Course title: **Real Estate Market and Land Management**
Pre-requisite(s): None
Co- requisite(s): None
Credits: 02 L: 2 T:0 P:0
Class schedule per week: 2
Class: M. Plan
Semester / Level: III
Branch: Architecture and Planning
Name of Teacher: Anjali Pathak

Course Objectives

This course enables the students:

A.	To understand various types of land markets (formal and illegal)
B.	To understand supply and demand equations and types of market
C.	To familiarise with the typology of land uses related to the market and their impact on spatial development.
D.	To learn tools for land management in urban and rural areas.

Course Outcomes

After the completion of this course, students will be able to:

CO1.	Understand the concepts and processes of urban land development in the core and fringe areas of a city.
CO2.	Apply appropriate analytical tools and techniques to assess patterns of land development in different urban zones.
CO3.	Identify and classify different land and property market typologies and examine their role in shaping urban spatial structure.
CO4.	Evaluate and propose land development management strategies to promote orderly and sustainable spatial development.

Syllabus

Module 1: Introduction to Land Economics
Economic principles of land use; real estate economy and property types, types of markets, concept of land and its application, Supply and demand dynamics, Demand Forecasting, interpretation of revenue maps and cadastral maps

Module 2: Land Policy, Market Regulation, and Development Management
Market conditions: formal vs informal and legal vs illegal, instrument of land policy and impact of market, Planning instruments, market development instruments, financial development instruments, fiscal instruments, and other supportive instruments, role of government in land market and mechanism of regulations, Monopoly power and its use, Role of private developers, Rent-seeking behavior and its impact on land supply and land access, Public–Private Partnerships (PPP) in land, Resettlement and Rehabilitation (R&R)

Module 3: Demand Side Management

Income elasticity of land demand, business cycles and its impact on demand for land, Externalities and internalities in land development and induced demand, economic growth and demand for land, Impact of changes in tastes and preferences on the type and pattern of land use, poor and their demand, Physical, fiscal, financial and legal incentives for inducing or restricting the demand for land, Mega investments and its effect on land; Property Rights: ownership, user and exchange rights: Its implication on land supply; Land Development: Type, cost, methods of disposal; Corruption and land markets: Corruption, black money and land markets; Relation between land, share and gold markets.

Module 4: Supply Side Management

Regulation in Land Markets: Social justice and land distribution: public domain, social-democratic regulation, corporatist regulation, collective action of the state and regulation of its supply of land; Overall impact of regulation on land prices: Master Plan, Zoning and other planning regulations and their impact on supply; Land conversions and its regulation/facilitation in peri-urban areas; Land utilization analysis; Common property and its use, tenancy and ownership, holding size and its relevance; Land Management Techniques: Private land assembly, TPS, co-operatives in land development, FDI in land development, land pooling and plot reconstitution, transfer of development rights, land sharing and land lease

Module 5: Land Pricing & Land Information System (LIS)

Land valuation techniques; Land pricing; Subsidies; Auctions; Type of development: plotted, flatted system, and their effect on land pricing; Hedonistic pricing; Land price behaviour in urban centres; Constructing the land price index; Government incentives for land supply, assembly and planned development; Sources of information for land information; Land records, in Urban and Rural areas: use of GIS mapping and SVAMITVA for land titiling, GIS Based property valuation (Unit based pricing, zone based, etc.); Peri-urban areas (SVAMITVA) transparency in land transaction, methods of publicising land price monitoring.

Textbooks:

T1. Pirounakis Nicholas G. (2012). Real Estate Economics: A Point-to-Point Handbook. Routledge, London.
T2. Di Pasquale, Denise, and William Wheaton. (1995). Urban Economics and Real Estate Markets. Upper Saddle River. Prentice Hall, New Jersey.
T3. Ling D. C. and R.A. Wayne Real Estate Principles: A Value Approach, McGraw-Hill: New York.
T4. Brett, Deborah L., & Schmitz, Adrienne (Second Edition), Real Estate Market Analysis – Methods and Case Studies, Urban Land Institute, Washington, D.C.
T5. Jacobus, Charles J. (Eleventh Edition), Real Estate Principles, Cengage Learning, Mason, OH, USA.

Reference books:

R1. Zachary Grossman, Pincus Jonathan, Shapiro Perry and Yengin Duygu (2018). Second-Best Mechanisms for Land Assembly and Hold-out Problems. Working Paper No. 2018-14. The University of Adelaide, Australia.
R2. Moss A. and Kieran Farelly (2024). Global Real Estate Capital Markets: Theory and Practice. Routledge, London.
R3. Mohanty K.P. (2021). Land Economics and Policy in Developing Countries. Sage Publications Pvt. Ltd., London.
R4. Burman Anirudh (2024). Land Markets. Carnegie India, New Delhi.

R5. Nagarajaiah K.S. (2022). Principle and Practice for Valuation of Land and Building. K S Nagarajaiah

Gaps in the syllabus (to meet Industry/Profession requirements): Nil

POs met through Gaps in the Syllabus: Nil

Topics beyond syllabus/Advanced topics/Design: Nil

POs met through Topics beyond syllabus/Advanced topics/Design: Nil

Course Delivery methods
Lecture by use of boards/LCD projectors/OHP projectors
Tutorials/Assignments
Seminars
Mini projects/Projects
Laboratory experiments/teaching aids
Industrial/guest lectures
Industrial visits/in-plant training
Self- learning such as use of NPTEL materials and internets
Simulation

Course Outcome (CO) Attainment Assessment tools & Evaluation procedure

Direct Assessment

Assessment Tool	% Contribution during CO Assessment
Quiz I	10
Quiz II	10
Quiz III	10
End Sem Examination Marks	50
Assignment	10
Seminar	10

Assessment Components	CO1	CO2	CO3	CO4
Quiz I	√	√	√	√
Quiz II	√	√	√	√
Quiz III	√	√	√	√
End Sem Examination	√	√	√	√
Assignment	√	√	√	√
Seminar	√	√	√	√

Indirect Assessment –

1. Student Feedback on Faculty
2. Student Feedback on Course Outcome

Mapping between Objectives and Outcomes

Mapping of Course Outcomes onto Program Outcomes

Course Outcome #	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	2	1	1	2	1	2
CO 2	2	2	2	2	2	2
CO 3	2	1	1	1	2	2
CO 4	3	2	3	2	2	3

Mapping Between COs and Course Delivery (CD) methods			
CD	**Course Delivery methods**	**Course Outcome**	**Course Delivery Method**
CD1	Lecture by use of boards/LCD projectors/OHP projectors	CO1	CD1, CD2, CD3
CD2	Tutorials/Assignments	CO2	CD1, CD2, CD3
CD3	Seminars	CO3	CD1, CD2, CD3
CD4	Mini projects/Projects	CO4	CD1, CD2, CD3
CD5	Laboratory experiments/teaching aids	CO4	CD1, CD2, CD3, CD5
CD6	Industrial/guest lectures		
CD7	Industrial visits/in-plant training		
CD8	Self- learning such as use of NPTEL materials and internet		
CD9	Simulation		

Lecture wise Lesson planning Details.

Week No.	Lect. No.	Topics to be covered	Text Book / References	COs mapped	Methodology used	Remarks by faculty if any
1	L1	Economic principles of land use; real estate economy and property types,		1	PPT Digi Class /ChalkBoard	
1	L2	types of markets, concept of land and its application,		1	PPT Digi Class /Chalk -Board	
2	L3	Supply and demand dynamics, Demand Forecasting, interpretation of revenue maps and cadastral maps		1	PPT Digi Class /Chalk -Board	
2	L4	Market conditions: formal vs informal and legal vs illegal, instrument of land policy and impact of market,		1	PPT Digi Class /Chalk -Board	
3	L5	Planning instruments, market development instruments, financial development instruments, fiscal instruments, and other		1	PPT Digi Class /Chalk -Board	

		supportive instruments,				
3	L6	Monopoly power and its use, Role of private developers, Public–Private Partnerships (PPP) in land,		1	PPT Digi Class /Chalk -Board	
4	L7	Rent-seeking behavior and its impact on land supply and land access, Resettlement and Rehabilitation (R&R)		2	PPT Digi Class /Chalk -Board	
4	L8	Income elasticity of land demand, business cycles and its impact Externalities and internalities in land development, induced demand, economic growth and demand for land		2	PPT Digi Class /Chalk -Board	
5	L9	Impact of change, preference and pattern of land use, poor and their demand		2, 4	PPT Digi Class /Chalk -Board	
5	L10	Incentive for inducing or restricting the demand of land, mega investment and property rights		2, 4	PPT Digi Class /Chalk -Board	
6	L11	Land development, corruption and land market, relation between land, share and gold		2, 4	PPT Digi Class /Chalk -Board	
6	L12	Regulation in Land Markets: Social justice and land distribution		3	PPT Digi Class /Chalk -Board	
7	L13	Overall impact of regulation on land prices; Land conversions and its regulation /facilitation in peri-urban areas;		3	PPT Digi Class /Chalk -Board	
7	L14	Common property and its use, tenancy and ownership, holding size and its relevance; Land Management Techniques		3	PPT Digi Class /Chalk -Board	
8	L15	FDI in land development, land pooling and plot reconstitution		3	PPT Digi Class /Chalk -Board	
8	L16	transfer of development rights, land sharing and land lease		3	PPT Digi Class /Chalk -Board	
9	L17	Land valuation techniques; Land pricing; Subsidies; Auctions; Type of development: plotted, flatted system, and their effect on		4	PPT Digi Class /Chalk -Board	

		land pricing;				
9	L18	Hedonic pricing		4	PPT Digi Class /Chalk -Board	
10	L19	Land price behaviour in urban centres; Constructing the land price index;		4	PPT Digi Class /Chalk -Board	
10	L20	Government incentives for land supply, assembly and planned development; Sources of information for land information;		4	PPT Digi Class /Chalk -Board	
11	L21	use of GIS mapping and SVAMITVA for land titiling, GIS Based property valuation (Unit based pricing, zone based)		4	PPT Digi Class /Chalk -Board Lab experiment	
11	L22	Peri-urban areas (SVAMITVA) transparency in land transaction, methods of publicising land price monitoring.		4	PPT Digi Class /Chalk -Board Lab experiment	

COURSE INFORMATION SHEET

Course code: **ARP 26721**
Course title: **Planning Studio- Regional Planning**
Pre-requisite(s): None
Co- requisite(s): None
Credits: 06 L: 0 T: 0 P: 12
Class schedule per week: 12
Class: M. Plan
Semester / Level: III
Branch: Architecture and Planning
Name of Teacher: Dr. Tiwari Pavan Kumar, & Dr. Rewati Raman

Course Objectives

This course enables the students:

A.	To understand the plan preparation for the integrated District(s) planning/metro region.
B.	To understand the sector interface, the hierarchy of settlement planning, local-to-district spatial budgeting, and fiscal budgeting interlinks.

Course Outcomes

After the completion of this course, students will be able to:

CO1.	To prepare the spatial development plan for a district(s)/metro region.
CO2.	To identify projects and proposals with budgets and financing models.

Syllabus

Preparation of Regional Development Plan for District(s): integrate/converge sectors, settlements, and finances; resource flows, plan land use implementation as per the 74h CAA and 73rd CAA, URDFPI, RADFPI guidelines, Source of funding the plan with Integrating District Development and Village Development Pan spatially with phasing, project identification for steering future development, phasing and Evaluation Plan.

Textbooks:

T1- Hall, P., & Tewdwr-Jones, M. (2019). *Urban and regional planning* (6th ed.). Routledge.
T2- LeGates, R. T., & Stout, F. (2015). *City and regional planning*. Routledge.
T3- Jain, A. K. (2012). *Urban and regional planning: A practical guide*. Khanna Publishers.
T-4 McLoughlin, J. B. (1969). *Urban and regional planning: A systems approach*. Faber and Faber.
T5- Friedmann, J., & Alonso, W. (1964). *Regional development and planning: A reader*. MIT Press.
T6- McHarg, I. L. (1969). *Design with nature*. Natural History Press.
T7- Jacobs, J. (1961). *The death and life of great American cities*. Random House.
T8- Gehl, J. (2010). *Cities for people*. Island Press.

Reference books:

R1- Perroux, F. (1988). *Growth poles and regional development*. In Regional economic development studies. Routledge.

R2- Glasson, J., & Marshall, T. (2007). *Regional planning*. Routledge.
R3- Richardson, H. W. (1979). *Regional economics*. University of Illinois Press.
R4- Blair, J. P., & Carroll, M. C. (2009). *Local economic development: Analysis and practice* (2nd ed.). Sage Publications.
R5- Isard, W. (1960). *Methods of regional analysis: An introduction to regional science*. MIT Press.

Gaps in the syllabus (to meet Industry/Profession requirements): Nil

POs met through Gaps in the Syllabus: Nil

Topics beyond syllabus/Advanced topics/Design: Nil

POs met through Topics beyond syllabus/Advanced topics/Design: Nil

Course Delivery methods
Lecture by use of boards/LCD projectors/OHP projectors
Tutorials/Assignments
Seminars
Mini projects/Projects
Laboratory experiments/teaching aids
Industrial/guest lectures
Industrial visits/in-plant training
Self- learning such as use of NPTEL materials and internets
Simulation

Course Outcome (CO) Attainment Assessment tools & Evaluation procedure

Direct Assessment

Assessment Tool	% Contribution during CO Assessment
Progressive Evaluation	50
End Sem Examination	50

Assessment Components	CO1	CO2
Progressive Evaluation	√	√
End Sem Evaluation	√	√

Indirect Assessment –

1. Student Feedback on Faculty
2. Student Feedback on Course Outcome

Mapping between Objectives and Outcomes

Mapping of Course Outcomes onto Program Outcomes

Course Outcome #	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	3	2	3	3	2
CO 2	3	3	3	2	3	2

Mapping Between COs and Course Delivery (CD) methods			
CD	**Course Delivery methods**	**Course Outcome**	**Course Delivery Method**
CD1	Lecture by use of boards/LCD projectors/OHP projectors	CO1 CO2	CD 1 CD 2
CD2	Tutorials/Assignments	CO1 CO2	CD 2 CD 3
CD3	Seminars		
CD4	Mini projects/Projects	CO1 CO2	CD 1 CD 2 CD 7
CD5	Laboratory experiments/teaching aids	CO1 CO2	CD 1 CD 2 CD 9
CD6	Industrial/guest lectures		
CD7	Industrial visits/in-plant training	CO1 CO2	CD 1 CD 2 CD 7
CD8	Self- learning such as use of NPTEL materials and internets	CO1 CO2	CD 1 CD 2 CD 9
CD9	Simulation	CO1 CO2	CD 1 CD 2 CD 9

Lecture wise Lesson planning Details.

Week No.	Lect. No.	Topics to be covered	Text Book /References	COs mapped	Methodology used	Remarks by faculty if any
1-2	L1-L12	Field trip for 2 weeks	T 1-3, R 1,4	1, 2	Industrial visits	
3-4	L13-L24	Data collection & processing	T 1-3, R 1,4	1, 2	PPT Digi Class /Chalk-Board	
5	L25	Internal evaluation of progress				
5-9	L26-L54	Preliminary Data analysis	T 4-6, R 2-4	1, 2	PPT Digi Class /Chalk-Board	
9	L55	Internal evaluation of progress				
10-13	L56-L78	Final analysis and report writing	T 4-6, R 2-4	1,2	Computerised formats and hard copy report	
14		Internal evaluation of progress				

COURSE INFORMATION SHEET

Course code: **ARP 26722**
Course title: **Planning Studio – Thesis Preliminaries**
Pre-requisite(s): Should have cleared all courses till Semester II
Co- requisite(s): None
Credits: 02 L: 0 T: 0 P: 4
Class schedule per week: 4
Class: M. Plan
Semester / Level: IV
Branch: Architecture & Planning
Name of Teacher: Dr. Satyaki Sarkar

Course Objectives
This course enables the students:

A	To understand current issues and research areas in relevant field of urban planning
B.	To explore various literature on the aspect of research
C.	To encourage finding of appropriate methodologies and tools for analysing the areas;
D.	To develop professional level skills on interactive presentation

Course Outcomes
After the completion of this course, students will be able to able to:

CO1.	To understand the development of research, and finding and collating relevant literature studies
CO2.	To identify appropriate techniques for data collection and analysis concerned with the field of research
CO3	To synthesize the knowledge and skills, acquired through the learning of various theories and practices
CO4	To deliver presentations on aspects of research

Syllabus
Students are required to undertake independent study/research to explore and develop an area of his/her own choice. It should cover identification of the thesis topic after scanning literature and identifying gaps, typology of research. Methods of research, time scheduling, preparation of samples, questionnaire, interview schedule, identifying stakeholders/sample, area/case study, and preparation for organizing the interview notes, report and abstract for canvassing during interviews.

1. Each student is required to prepare a thesis on a subject concerning urban and regional planning (presented through a seminar) and under the guidance of an advisor/s, approved by the department.
2. The topic of research should be an original study in the field of his / her interest.
3. The subject of the thesis may be conceptual, historical analytical, comparative or in any other area related to urban and regional planning, which will be approved by the departmental jury, in stages.
4. Development of the thesis is to be done at this stage through delineation of project area, case studies, literature studies, survey and data collection only.

5. Seminar is to be presented regarding tool and techniques to be applied in the dissertation project

Textbooks: NA

Reference books: na

Gaps in the syllabus (to meet Industry/Profession requirements): Nil

POs met through Gaps in the Syllabus: Nil

Topics beyond syllabus/Advanced topics/Design: Nil

POs met through Topics beyond syllabus/Advanced topics/Design: Nil

	Course Delivery methods
CD1	Seminars
CD2	Mini projects/Projects
CD3	Laboratory experiments/teaching aids
CD4	Industrial/guest lectures
CD5	Self- learning such as use of NPTEL materials and internets

Course Outcome (CO) Attainment Assessment tools & Evaluation procedure

Direct Assessment

Assessment Tool	**% Contribution during CO Assessment**
Progressive Evaluation	50
End Evaluation	50

Assessment Components	**CO1**	**CO2**	**CO3**	**CO4**
Progressive Evaluation	√	√	√	√
End Evaluation	√	√	√	√

Indirect Assessment –

1. Student Feedback on Faculty
2. Student Feedback on Course Outcome

Mapping between Objectives and Outcomes

Mapping of Course Outcomes onto Program Outcomes

Course Outcome #	**Program Outcomes**					
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**
CO 1	1	3	1	3	1	1
CO 2	2	2	3	3	1	2
CO 3	3	2	3	1	2	1
CO 4	1	3	1	1	3	3

Mapping Between COs and Course Delivery (CD) methods		
CD	**Course Delivery methods**	**Course Outcome**
CD1	Seminars	CO1, CO2, CO3, CO4
CD2	Mini projects/Projects	CO2, CO3, CO4
CD3	Laboratory experiments/teaching aids	CO2, CO3, CO4
CD4	Industrial/guest lectures	CO3, CO4,
CD5	Self- learning such as use of NPTEL materials and internets	CO1, CO2

Lecture wise Lesson planning Details.

Week No.	Lect. No.	Topics to be covered	Textbook / References	COs mapped	Methodology used	Remarks by faculty if any
1-2	1-7	Finalisation of the area of research		CO1	Computerised tool	
2	8	Internal evaluation				
3-6	9-23	Literature review and case studies		CO1, CO2	Computerised tool	
6	24	Internal evaluation				
7-10	25-39	Tools and Techniques		CO1, CO2	Computerised tool	
10	40	Internal evaluation				
11-12	41-47	Finalisation of all literature review		CO2, CO3, CO4	Computerised tool	
12	48	Internal evaluation				
13-14	49-56	Preparation of project report and presentation	R-1	CO3, CO4	Computerised tool	

COURSE INFORMATION SHEET

Course code: **ARP 26723**
Course title: **Internship**
Pre-requisite(s): None
Co- requisite(s): None
Credits: 02 L: 0 T: 0 P: 0
Class schedule per week **--**
Class: M. Plan.
Semester / Level: III
Branch: Architecture & Planning
Name of Teacher: Dr. Rizwan Kazmi

Course Objectives

This course enables the students:

A	To provide each student with an opportunity to undertake in-depth training and research in the field.
B.	To expose students to a range of career-oriented and job-related opportunities.
C.	To develop professional competencies and industry-relevant skills.

Course Outcomes

After the completion of this course, students will be able to:

CO1.	To understand the nature and scope of professional work carried out in the relevant industry/discipline.
CO2.	To develop the ability to contribute effectively to different work profiles in accordance with industry requirements.
CO3.	To develop the ability to present and communicate professional work and experiences effectively.

Syllabus

1. Each student is required to undergo **eight weeks of intensive training** during the summer vacation after the second semester at a **Planning/Urban Design organisation** engaged in projects related to Urban and Regional Planning, Transportation Planning, Housing and associated infrastructure, Economic Planning, Infrastructure Planning, or related areas.
2. At the completion of the training programme, each student must **prepare and submit a comprehensive report** detailing the nature of work undertaken, learning outcomes, and the work schedule followed during the training period.
3. Each student is also required to **deliver a presentation** summarising the work carried out and the knowledge gained during the training.

Textbooks: NA Reference books: NA

Gaps in the syllabus (to meet Industry/Profession requirement): Nil

POs met through Gaps in the Syllabus: Nil

Topics beyond syllabus/Advanced topics/Design: Nil

POs met through Topics beyond syllabus/Advanced topics/Design: Nil

	Course Delivery methods
CD1	Seminars
CD2	Mini projects/Projects

Course Outcome (CO) Attainment Assessment tools & Evaluation procedure
Direct Assessment

Assessment Tool	% Contribution during CO Assessment
End Sem Evaluation	100

Assessment Components	CO1	CO2	CO3
End Sem Evaluation	√	√	√

Indirect Assessment –

1. Student Feedback on Faculty
2. Student Feedback on Course Outcome

Mapping between Objectives and Outcomes

Mapping of Course Outcomes onto Program Outcomes

Course Outcome #	Program Outcomes					
	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	1	3	1	3	1	1
CO 2	2	2	3	3	1	2
CO 3	3	2	3	1	2	1
CO 4	1	2	1	1	3	3

Mapping Between COs and Course Delivery (CD) methods		
CD	Course Delivery methods	Course Outcome
CD1	Seminars	CO1, CO2, CO3,
CD2	Mini projects/Projects	CO2, CO3,

Lecture wise Lesson planning Details.

Week No.	Lect. No.	Topics to be covered	TextBook / References	COs mapped	Methodology used	Remarks by faculty if any
1-2	1-6	Collation of data collected		CO1	Computerised tool	
3-6	7-18	Collation of data collected		CO1, CO2	Computerised tool	
7	19-21	Internal evaluation				
8-13	22 - 40	Preparation of synopsis and project report		CO1, CO2	Computerised tool	
14	40-41	Internal evaluation				CO3

SEMESTER IV

COURSE INFORMATION SHEET

Course code: **ARP 26751**
Course title: **Planning Legislation, Institutional Governance and Professional Practice**
Pre-requisite(s): None
Co- requisite(s): None
Credits: 03 L: 3 T:0 P:0
Class schedule per week: 03
Class: M. Plan
Semester / Level: IV
Branch: Architecture and Planning
Name of Teacher: Dr. Smriti Mishra

Course Objectives

This course enables the students:

A.	to understand the interface between legislation and urban planning
B.	to educate the students regarding basic concept of law and Indian constitution and the requirements of various acts, laws, rules and regulations related to housing and urban planning
C.	to understand the formal and informal institutions involved in development process, type of governance system, efficiency, and equity.
D.	to understand the digital governance at various levels from Ward to Regional level for governance
E.	to understand the scope, nature and procedure of professional practice; prepare consultancy proposals and quote fees and charges for professional work in housing and spatial planning

Course Outcomes

After the completion of this course, students will be able to:

CO1.	to comprehend the interaction between legislation and urban planning, including how legal frameworks influence urban development and planning processes.
CO2.	to acquire foundational knowledge of legal concepts, and specific acts, laws, rules, and regulations related to urban and regional planning.
CO3.	equipped to understand the various hierarchy and typology of institutions and spatial development is govern by them
CO4.	to appreciate the sectoral convergence and divergence for development process in spatial development
CO5.	to identify the scope, nature, and procedural aspects of professional practice in spatial planning at urban and regional scale
CO6.	to appreciate, to accurately quote fees and charges for professional services provided in spatial planning at urban and regional scale

Syllabus

Module 1: Concept of Planning Legislation

Unit 1: Significance and Objectives of Legislation; Constitutional basis and provisions relating to land, its development and use; Overview of legal tools in various components of Urban Planning and Development.

Module 2: Planning Legislation in India
Unit 1: Evolution of Planning Legislation in India; Types and description of various Acts: Town and Country Planning Acts, Improvement Trust Act, Urban Planning and Development Authorities Act: objectives, contents, procedures for preparation and implementation of regional plans, master plans and town planning schemes;
Unit 2: Various Acts related to urban governance (Municipal Acts, Model-Building Bye-Laws); Land resources, environment protection, public participation in statutory process; Land Acquisition and Settlement Act (LARR 2013), Town and Country Planning Act, Other Acts related to Infrastructure: NHAI, Port, Airport and Railways. Local Tenancy Acts (CNT Act, etc.), Environmental Laws, Forest Acts

Module 3: Institutions and Governance -I
Unit 1: Type of Formal and informal institutions involved in development and governance process, their role and relevance (legal, political, social, cultural and economic institutions); Role of the State in Planning; Hierarchies, Scales and Levels of Planning: their interface, conflicts, reach and their effectiveness in planning; Difference between organizations and institutions, government and governance;
Unit 2: Town & Country Planning Organization, Urban Development Departments, City Improvement Trust, Development Authorities, Municipal Corporation etc.: objectives, functions and duties, organisational structure, technical capacity, statutory obligations, budgetary outlays, coordination and implementation issues

Module 4: Institutions and Governance- II
Unit 1: Development Planning and decentralisation; Institutional frame and mechanism for urban governance as envisaged in 73rd and 74th CAA; Digital Governance, E-Democracy, E-Governance and Grievances Redressal system; Case study related to digital and e-governance
Unit 2: Participatory Governance and benefits of participation in community planning; Role of People's participation in planning process: Process of inclusion and exclusion in governance; bottom-up planning process; Community-based evaluation of planned projects; Public distribution system

Module 5: Professional Practice:
Unit 1: Professional Activities and responsibilities of professional institutes and bodies in planning, Aims and objectives of professional institutes and bodies in planning; Professional roles and responsibilities of planning consultants; Professional ethics; Responsibilities towards clients, fellow professionals and public; Scope of services for different projects.
Unit 2: Consultancy agreements and safeguards; Fees and scales of professional charges; Negotiation, liability, code of conduct, arbitration.

Textbooks:
1. Aijaz R. (2012). Democracy and Urban Governance in India. Academic Foundation
2. Osborne S.P. (2010). The new public governance: emerging perspectives on the theory and practice of public governance. Routledge, London
3.Pattanaik B. K. (2025) Urban Development and Planning: An Introduction. Routledge, India.

4. Kulshrestha S. K. (2012), Urban and Regional Planning in India: A Handbook for Professional Practice. Saga Publications, New Delhi.
5.Rydin Y., Robert Beauregard, Marco Cremaschi and Laura Lieto (2022). Regulation and Planning: Practices, Institutions, Agency. Routledge, London
6. Shah Uttam Chand (2023). Planning Legislation covering Urban & Regional Planning and Environmental Laws in India. Notion Press, Chennai.
7.Singh Sukhpal, Jyotsna Jha, A. Indira and A.V. Arunkumar. (2024). Institutions and Public Policy for India's Sustainable Development. Routledge, London.

Reference books:

1. Jain, A. K. (2010). Urban Planning and Governance a New Paradigm. Bookwell Publications
2. Institute of Town Planners, India. (2003). Memorandum Articles of Association and Byelaws. New Delhi.
3.Kapucu Naim (2020). Network Governance: Concepts, Theories, and Applications. Routledge, London.
4.Klijn E.H. and J.F.M. Koppenjan (2012), Governance network theory: past, present and future, Policy and Politics. Department of Public Administration, Erasmus University Rotterdam, Netherlands.
5. Le Galès, P. (2001). Urban governance and policy networks: on the boundedness of policy networks. A French case. Springer, Berlin.
6. Ministry of Housing and Urban Affairs (2024): 'The Constitution (74th Amendment Act, 1992). Government of India, New Delhi.
7. Ministry of Housing and Urban Affairs. (2015). Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines Vol. 1 & Vol.2.
8. Ministry of Panchayati Raj (2024). Government of India, New Delhi.
9. Rhodes R.A.W. (1997). Understanding Governance. Open University Press, Buckingham.
10. Rogers D.L. and D.A. Whetten (1982). Inter-organizational Coordination: Theory, Research, and Implementation. Iowa State University Press, Ames.
11. Teisman G.R., A. van Buuren and L. Gerrits (2008). Managing complex governance networks. Routledge, London.

Gaps in the syllabus (to meet Industry/Profession requirements): Nil

POs met through Gaps in the Syllabus: Nil

Topics beyond syllabus/Advanced topics/Design: Nil

POs met through Topics beyond syllabus/Advanced topics/Design: Nil

Course Delivery methods
Lecture by use of boards/LCD projectors/OHP projectors
Tutorials/Assignments
Seminars
Mini projects/Projects
Laboratory experiments/teaching aids
Industrial/guest lectures
Industrial visits/in-plant training
Self- learning such as use of NPTEL materials and internets

Simulation

Course Outcome (CO) Attainment Assessment tools & Evaluation procedure

Direct Assessment

Assessment Tool	% Contribution during CO Assessment
Quiz I	10
Quiz II	10
Quiz III	10
End Sem Examination Marks	50
Assignment	10
Seminar	10

Assessment Components	CO1	CO2	CO3	CO4	CO5	CO6
Quiz I	√	√	√	√	√	√
Quiz II	√	√	√	√	√	√
Quiz III	√	√	√	√	√	√
End Sem Examination	√	√	√	√	√	√
Assignment	√	√	√	√	√	√

Indirect Assessment –

1. Student Feedback on Faculty
2. Student Feedback on Course Outcome

Mapping between Objectives and Outcomes

Mapping of Course Outcomes onto Program Outcomes

Course Outcome #	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	3	3	2	2	3
CO 2	3	2	1	1	3	3
CO 3	3	3	3	2	2	3
CO 4	3	3	2	2	3	3
CO 5	3	3	3	3	3	3
CO 6	1	1	1	1	1	2

Mapping Between COs and Course Delivery (CD) methods			
CD	Course Delivery methods	Course Outcome	Course Delivery Method
CD1	Lecture by use of boards/LCD projectors/OHP projectors	CO1, CO2, C03,C04	
CD2	Tutorials/Assignments	CO1, CO2, C03, C04	
CD3	Seminars	CO4, CO5	

CD4	Mini projects/Projects	CO5	
CD5	Laboratory experiments/teaching aids		
CD6	Industrial/guest lectures		
CD7	Industrial visits/in-plant training	CO4	
CD8	Self- learning such as use of NPTEL materials and internet	CO1, CO2, C03,C04	
CD9	Simulation		

Lecture wise Lesson planning Details.

Week No.	Lect. No.	Topics to be covered	Text Book / References	COs mapped	Methodology used	Remarks by faculty if any
1	L1	Significance and Objectives of Legislation;			PPT Digi Class /Chalk - Board	
	L2	Constitutional basis and provisions relating to land, its development and use;			PPT Digi Class /Chalk - Board	
	L3	Overview of legal tools in various components of Urban Planning and Development; Evolution of Planning Legislation in India			PPT Digi Class /Chalk - Board	
2	L4	Types and description of various Acts: Town and Country Planning Acts, Improvement Trust Act			PPT Digi Class /Chalk - Board	
	L5	Urban Planning and Development Authorities Act: objectives, contents, procedures for preparation and implementation of regional plans			PPT Digi Class /Chalk - Board	
	L6	objectives, contents, procedures for preparation and implementation of master plans	R7		PPT Digi Class /Chalk - Board	
3	L7	objectives, contents, procedures for preparation and implementation of town planning schemes	R7		PPT Digi Class /Chalk - Board	
	L8	Various Acts related to			PPT Digi	

		urban governance (Model Municipal Law, Model-Building Bye-Law)			Class /Chalk - Board	
	L9	Land resources, environment protection, public participation in			PPT Digi Class /Chalk - Board	
4	L10	statutory process;			PPT Digi Class /Chalk - Board	
	L11	Land Acquisition and Settlement Act (LARR 2013)			PPT Digi Class /Chalk - Board	
	L12				PPT Digi Class /Chalk - Board	
5	L13	Town and Country Planning Act,			PPT Digi Class /Chalk - Board	
	L14	Other Acts related to Infrastructure: NHAI, Port, Airport and			PPT Digi Class /Chalk - Board	
	L15	Railways.			PPT Digi Class /Chalk - Board	
6	L16	Local Tenancy Acts (CNT Act, etc.)			PPT Digi Class /Chalk - Board	
	L17	Environmental Laws,			PPT Digi Class /Chalk - Board	
	L19	Forest Acts			PPT Digi Class /Chalk - Board	
7	L20	Type of Formal and informal institutions involved in development			PPT Digi Class /Chalk - Board	
	L21	and governance process, their role and relevance (legal, political, social, cultural and economic institutions);			PPT Digi Class /Chalk - Board	
	L22	Role of the State in Planning;	R7		PPT Digi Class /Chalk - Board	
8	L23	Hierarchies, Scales and Levels of Planning: their interface, conflicts, reach and their effectiveness in planning; Difference	R7		PPT Digi Class /Chalk - Board	

		between organizations and institutions, government and governance;				
	L24	Town & Country Planning Organization; Urban Development Departments,			PPT Digi Class /Chalk - Board	
	L25	City Improvement Trust, Development Authorities,			PPT Digi Class /Chalk - Board	
9	L26	Municipal Corporation etc.: objectives, functions and duties, organisational structure, technical capacity, statutory obligations, budgetary outlays, coordination and implementation issues			PPT Digi Class /Chalk - Board	
10	L27	Development Planning and decentralisation; Institutional frame and mechanism for urban governance as envisaged in 73rd and 74th CAA	R4		PPT Digi Class /Chalk - Board	
	L28	Digital Governance, E-Democracy, E-Governance and Grievances Redressal system; Case study related to digital and e-governance			PPT Digi Class /Chalk - Board	
	L29	Participatory Governance and benefits of participation in community planning			PPT Digi Class /Chalk - Board	
11	L30	Role of People's participation in planning process			PPT Digi Class /Chalk - Board	
	L31	Process of inclusion and exclusion in governance; bottom up planning process;			PPT Digi Class /Chalk - Board	
	L32	Community-based evaluation of planned projects; Public distribution system			PPT Digi Class /Chalk - Board	
12	L33	Professional Activities and responsibilities of	R1		PPT Digi Class /Chalk -	

		professional institutes and bodies in planning,			Board	
	L34	Aims and objectives of professional institutes and bodies in planning	R1		PPT Digi Class /Chalk - Board	
	L35	Professional roles and responsibilities of planning consultants; Professional ethics; Responsibilities towards clients, fellow professionals and public	R1		PPT Digi Class /Chalk - Board	
13	L36	Scope of services for different projects; Consultancy agreements and safeguards	R1		PPT Digi Class /Chalk - Board	
	L37	Fees and scales of professional charges; Negotiation, liability	R1		PPT Digi Class /Chalk - Board	
	L38	code of conduct, arbitration.	R1		PPT Digi Class /Chalk - Board	

COURSE INFORMATION SHEET

Course code: **ARP 26752**
Course title: **Project Planning, Management and Development Finance**
Pre-requisite(s): None
Co- requisite(s): None
Credits: 03 L:3 T:0 P:0
Class schedule per week: 3
Class: M. Plan
Semester / Level: IV
Branch: Architecture and Planning
Name of Teacher: Dr. Bimal Chandra Roy

Course Objectives

This course enables the students:

A.	To understand spatial data infrastructure through advanced GIS platform
B.	To simulate planning preparation, manage/monitor and assess evaluation within a short time
C.	To appreciate the development finance, its various forms and sources, and techniques to raise funds
D.	To understand the financing mechanisms of finances for urban and regional development including the Center-State-Local Self Governance fiscal arrangements

Course Outcomes

After the completion of this course, students will be able to:

CO1.	To interface the GIS skills to spatial planning
CO2.	To simulate, prepare, manage/monitor and evaluate spatial planning through the digital network system..
CO3.	To appreciate the development finance, its various forms and sources, and techniques to raise funds
CO4.	To appreciate the constitutional provisions of fiscal transfers from centre to state and local self-government, formulas associated with it and its effectiveness.

Syllabus

Module 1: Introduction to Project Appraisal, Project Cycle and Stages of Appraisal
Relevance of Project in Metro urban region planning, Identification, project cycle, Urban Planning and project appraisal; Stages of Appraisals: Financial, Economic, Social, Institutional and Environmental appraisals; Sensitivity Analysis of each of appraisals.

Module 2: Detailed Project Report (DPR)
Definition of DPR, content in DPR: step by step process; Project Background, Feasibility study approach: Pre-implementation stage, implementation stage, and post-implementation stage; Types of surveys to be carried out for DPR; Team mobilization for DPR making; Processes involved in financial planning including the preparation and analysis of budgets,

cost estimation, and financial audits; The role of stakeholder contributions in project financing and management, and strategies for managing emergency risk funds.

Module 3: Monitoring and Evaluation

Project Monitoring and Evaluation: Network analysis (CPM, PERT); Software for Project Appraisal and Monitoring and Evaluation; Types of Evaluation: Concurrent and Post Impact Evaluation.

Module 4: Overview of Development Finance

Development Finance: approaches, concepts, components, process, credits rating; Role of Improvement Trusts, Development Authorities, SEZs and Special Purpose Vehicles (SPV) in Equity Finance, Taxes, Fees, Development Charges, Urban Finance Management.

Module 5: Innovative Methods of Financing Urban Development

Monetary Exaction: Betterment Levy, Impact Fee, External Development Charges and Vacant Land Development Tax; Land Exactions: TDR, Town Planning Scheme, Monetisation of Underutilised Public Assets, Valorisation Charges; External Finance: Debt Financing, PPP, Financial Intermediaries, Municipal Bond, Pooled Finance

Textbooks:

T1. Bansal Vijay (2023). Project Management: Planning and Scheduling Techniques. Taylor and Francis, London.
T2. Kerzner Harold R. (2013). Project Management: A Systems Approach to Planning, Scheduling, and Controlling. John Wiley & Sons, New Jersey.
T3. Ryan Roberta and Ronald Woods (2015). Decentralisation and Subsidiarity: Concepts and frameworks for emerging economies. Forum of Federations. Ottawa, Ontario.
T4. Central Finance Commission (2021). XV Central Finance Commission. Government of India, New Delhi.

Reference books:

R1. Asian Development Bank (2024). Project Performance Evaluation Report for Secondary Cities Development Project. Manila.
R2. Participatory Research in Asia (PRIA) (2018). State Finance Commission Recommendations. PRIA, New Delhi.
R3. Central Finance Commission (2021). XV Central Finance Commission. Government of India, New Delhi.

Gaps in the syllabus (to meet Industry/Profession requirements): Nil

POs met through Gaps in the Syllabus: Nil

Topics beyond syllabus/Advanced topics/Design: Nil

POs met through Topics beyond syllabus/Advanced topics/Design: Nil

Course Delivery methods
Lecture by use of boards/LCD projectors/OHP projectors
Tutorials/Assignments
Seminars
Mini projects/Projects

Laboratory experiments/teaching aids
Industrial/guest lectures
Industrial visits/in-plant training
Self- learning such as use of NPTEL materials and internets
Simulation

Course Outcome (CO) Attainment Assessment tools & Evaluation procedure

Direct Assessment

Assessment Tool	% Contribution during CO Assessment
Quiz I	10
Quiz II	10
Quiz III	10
End SemExamination Marks	50
Assignment	10
Seminar	10

Assessment Components	CO1	CO2	CO3	CO4
Quiz I	√	√	√	√
Quiz II	√	√	√	√
Quiz III	√	√	√	√
End Sem Examination	√	√	√	√
Assignment	√	√	√	√
Seminar	√	√	√	√

Indirect Assessment –

1. Student Feedback on Faculty
2. Student Feedback on Course Outcome

Mapping between Objectives and Outcomes

Mapping of Course Outcomes onto Program Outcomes

Course Outcome #	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	2	1	1	2	1	2
CO 2	2	2	2	2	2	2
CO 3	2	1	1	1	2	2
CO 4	3	2	3	2	2	3

Mapping Between COs and Course Delivery (CD) methods			
CD	**Course Delivery methods**	**Course Outcome**	**Course Delivery Method**
CD1	Lecture by use of boards/LCD projectors/OHP projectors	CO1	CD1, CD2, CD3
CD2	Tutorials/Assignments	CO2	CD1, CD2, CD3
CD3	Seminars	CO3	CD1, CD2, CD3
CD4	Mini projects/Projects	CO4	CD1, CD2, CD3
CD5	Laboratory experiments/teaching aids		

CD6	Industrial/guest lectures		
CD7	Industrial visits/in-plant training		
CD8	Self- learning such as use of NPTEL materials and internets		
CD9	Simulation		

Lecture wise Lesson planning Details.

Week No.	Lect. No.	Ch. No.	Topics to be covered	Textbook / References	COs mapped	Methodology used	Remarks by faculty if any
1	L1	1	Relevance of Project in Metro urban region planning, Identification, project cycle, Urban Planning and project appraisal	T2	1	PPT Digi Class/Chalk -Board	
1	L2	1	Urban Planning and project appraisal	T1	1	PPT Digi Class/Chalk -Board	
2	L3	1	Stages of Appraisals: Financial, Economic, Social, Institutional and Environmental appraisals; Sensitivity Analysis of each of appraisals	T1, T2	1	PPT Digi Class/Chalk -Board	
2	L4	2	Definition of DPR, content in DPR: step by step process; Project Background, Feasibility study approach: Pre-implementation stage, implementation stage, and post-implementation stage	T1, T2	1	PPT Digi Class/Chalk -Board	
3	L5	2	Types of surveys to be carried out	T1, T2	1	PPT Digi Class/Chalk	

			for DPR; Team mobilization for DPR making;			-Board	
3	L6	2	Processes involved in financial planning including the preparation and analysis of budgets, cost estimation, and financial audits	T1, T2	1	PPT Digi Class/Chalk -Board	
4	L7	3	Project Monitoring and Evaluation: Network analysis (CPM, PERT);	T3	2	PPT Digi Class/Chalk -Board	
4	L8	3	Software for Project Appraisal and Monitoring and Evaluation	T1, T2	2	PPT Digi Class/Chalk -Board	
5	L9	3	Types of Evaluation: Concurrent Evaluation.	T1, T2	3, 4	PPT Digi Class/Chalk -Board	
5	L10	3	Types of Evaluation: Post Impact Evaluation.	T1, T2	3, 4	PPT Digi Class/Chalk -Board	
6	L11	4	Development Finance: approaches, concepts, components, process, credits rating	T3, T4	3, 4	PPT Digi Class/Chalk -Board	
6	L12	4	Role of Improvement Trusts, Development Authorities, SEZs	T3	3	PPT Digi Class/Chalk -Board	
7	L13	4	Special Purpose Vehicles (SPV)	T3	3	PPT Digi Class/Chalk -Board	
7	L14	4	Equity Finance, Taxes, Fees, Development Charges, Urban	T4	3	PPT Digi Class/Chalk -Board	

			Finance Management				
8	L15	5	Monetary Exaction: Betterment Levy, Impact Fee	T4, R1	4	PPT Digi Class/Chalk -Board	
8	L16	5	Monetary Exaction: Betterment Levy, Impact Fee	T4, R1	4	PPT Digi Class/Chalk -Board	
9	L17	5	Vacant Land Development	T2, T3, R2	4	PPT Digi Class/Chalk -Board	
9	L18	5	Land Exactions: TDR, Town Planning Scheme	T2, T3, R2	4	PPT Digi Class/Chalk -Board	
10	L19	5	Monetisation of Underutilised Public Assets,	T2, T3, R2	4	PPT Digi Class/Chalk -Board	
10	L20	5	Valorisation Charges	T2, T3, R2	4	PPT Digi Class/Chalk -Board	
11	L21	5	External Finance: Debt Financing, PPP, Financial Intermediaries,	T2, T3, R3	4	PPT Digi Class/Chalk -Board	
11	L22	5	External Finance: Debt Financing, PPP, Financial Intermediaries, Municipal Bond, Pooled Finance	T2, T3, R1,R3	4	PPT Digi Class/Chalk -Board	

COURSE INFORMATION SHEET

Course code: **ARP 26761**
Course title: **Planning Studio-Thesis**
Pre-requisite(s): Cleared all courses till Sem II & registered for Thesis Preliminaries in Sem III
Co- requisite(s): None
Credits: 12 L: 0 T: 0 P: 0
Class schedule per week: 0
Class: M. Plan
Semester / Level: IV
Branch: Architecture & Planning
Name of Teacher: Dr. Satyaki Sarkar

Course Objectives
This course enables the students:

A	To expose the students to guided research on topic initiated in 3rd semester
B.	To introduce students to data collection on their field of research
C.	To encourage finding of appropriate result through use of relevant tools and techniques for analysis of data deduced in 3rd semester
D.	To propose appropriate strategies / policies / guidelines for development of their research areas.

Course Outcomes
After the completion of this course, students will be able to able to:

CO1.	To enhance ability to critically analyse issue, developing understanding of the underlying problems and trends
CO2.	To advance research skills emphasizing on the techniques of analysis and improve problem solving abilities ensuring accuracy and thoroughness
CO3.	To synthesize the knowledge and skills, acquired through the learning of various theories and practices to provide proposals for future.
CO4.	To experience in managing a research project from inception to completion, in planning, executing and reviewing process.

Syllabus
Guided research by a student under the supervision of an individual/group of faculty members from formulation to submission of the research.
In continuation to the previous semester thesis, the student is required to collect data, analyse the collected data and formulate strategies, policies, and principles for the development of the analysed scenario. The student is also required to prove the validity of the proposal on any chosen action area within the study zone. Each student is required to defend his / her thesis through a presentation to external panel of experts.
Textbooks: NA

Reference books:
R1 - Turabian, Kate L. A Manual for Writers of Research Papers, Theses, and Dissertations: Chicago Style for Students and Researcher.

Gaps in the syllabus (to meet Industry/Profession requirements): Nil

POs met through Gaps in the Syllabus: Nil

Topics beyond syllabus/Advanced topics/Design: Nil

POs met through Topics beyond syllabus/Advanced topics/Design: Nil

	Course Delivery methods
CD1	Seminars
CD2	Mini projects/Projects
CD3	Laboratory experiments/teaching aids

Course Outcome (CO) Attainment Assessment tools & Evaluation procedure

Direct Assessment

Assessment Tool	**% Contribution during CO Assessment**
Progressive Evaluation	50
End Evaluation	50

Assessment Components	**CO1**	**CO2**	**CO3**	**CO4**
Progressive Evaluation	√	√	√	√
End Evaluation	√	√	√	√

Indirect Assessment –

1. Student Feedback on Faculty
2. Student Feedback on Course Outcome

Mapping between Objectives and Outcomes

Mapping of Course Outcomes onto Program Outcomes

Course Outcome #	**Program Outcomes**					
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**
CO 1	1	3	3	3	1	1
CO 2	3	2	1	1	1	2
CO 3	3	3	3	3	3	3
CO 4	3	3	3	3	3	3

Mapping Between COs and Course Delivery (CD) methods		
CD	**Course Delivery methods**	**Course Outcome**
CD 1	Seminars	CO1, CO2, CO3, CO4
CD 2	Mini projects/Projects	CO2, CO3, CO4
CD 3	Laboratory experiments/teaching aids	CO2, CO3,

Lecture wise Lesson planning Details.

Week No.	Lect. No.	Topics to be covered	Textbook / References	COs mapped	Methodology used	Remarks by faculty if any
1-2	1-47	Collation of data collected		CO1	Computerised tool	
2	48	Internal evaluation				
3-6	49-143	Analysis of data collected		CO1, CO2	Computerised tool	
6	144	Internal evaluation				
7-10	145-239	Final analysis of data collected		CO1, CO2	Computerised tool	
10	240	Internal evaluation				
11-12	241-287	Finalisation of proposal		CO2, CO3, CO4	Computerised tool	
12	288	Internal evaluation				
13-14	289-336	Preparation of synopsis and project report	R-1	CO3, CO4	Computerised tool	