

CHOICE BASED CURRICULUM

FOR

MASTER OF PLANNING

(URBAN AND REGIONAL PLANNING)



DEPARTMENT OF ARCHITECTURE & PLANNING

BIRLA INSTITUTE OF TECHNOLOGY MESRA

RANCHI, INDIA



Department of Architecture and Planning

Birla Institute of Technology, Mesra, Ranchi - 835215 (India)

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 motivate 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 in order 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	16	8	16	
	Semester total credit	12	0	19	21.5 Credits	31 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	
	Open Elective II (OE)/MOOC	3	0	0	3	3	
Departmental Lab							
ARP 26721	Planning Studio - Regional Planning	0	0	16	8	16	
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 2 nd semester, and credits will be included in 3 rd semester]	0	0	0	2	-	
	Semester total credit	11	0	20	23 Credits	31 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				87 Credits		

Sem I

COURSE INFORMATION

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

Course Objectives <i>This course aims to provide students with:</i>	
Sl No.	Objectives
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 (COs) <i>Upon successful completion of the course, students will be able to</i>	
CO	Course Outcomes
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

<i>Module No.</i>	<i>Module name</i>	<i>Detailed Contents</i>	<i>No. of Lecture</i>
Module 1	Evolution of Settlements and Planning concepts	Significance of the study of evolution of settlements, Classification of settlements, Planning characteristics of ancient villages and towns: Cases of River Valley civilizations (Indus valley: Harappa, Mohenjodaro, and Dholavira; Egyptian civilization, Mesopotamian civilization, Indo-Gangetic Region, Chinese and South American); Greek and Roman Civilizations; BC period Towns in India; Silk Route Cities: cases of Vaishali, Bhaghalpur, Cosmological influences on the origins and growth of cities, Effects of cultural influence on physical form of cities; Influence of India Vedic Literature and ancient texts and treatise on the evolution of Planning thought, Town planning in ancient Deccan: contribution of the Hoysalas, Vijaya Nagara dynasties in town planning (cases of Sri Rangam, Kancheepuram, and port town of Poompugar); Medieval Town Planning in India, Influence of Rajputs in Western India and their contribution to planning.	7 Lectures
Module 2	Dimensions of Planning	Urban processes and criteria of location and development of towns in history: political, economic, technological, social and cultural factors which have shaped settlements through history; 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.	7 Lectures
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.).	7 Lectures
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	7 Lectures

		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).	7 Lectures

<i>Learning Resources</i>	
<i>Text Books</i>	<i>Reference Books</i>
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.	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)	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 Outcome (Co) Attainment Assessment Tools and Evaluation Procedure

Direct Assessment	Assessment Tool	% Contribution during CO Assessment				
	Continuous Internal Assessment	50%				
	Semester End Examination	50%				
	Continuous Internal Assessment	% Distribution				
	Best 2 Quiz marks out of 3 Quizzes of 15 marks each.	30%				
	Assignment(s)	10%				
	Seminar before a Committee	10%				
	Assessment Components	CO1	CO2	CO3	CO4	CO5
	Continuous Internal Assessment	✓	✓	✓	✓	✓
	Semester End Examination	✓	✓	✓	✓	✓

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

Mapping Between Course Outcomes and Program Outcomes						
CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	2	2	3	2	2
CO2	3	3	3	1	2	1
CO3	1	3	3	2	3	3

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 (SL) such as use of NPTEL materials and internets
CD7	Simulation

Mapping Between Course Outcomes and Course Delivery Method	
Course Outcomes	Course Delivery Method
CO1	CD1, CD6
CO2	CD1, CD2, CD6
CO3	CD1, CD2, CD6

Course Designers		
Experts from Industry	Experts from Higher Technical Institutions	Internal Experts
		✓

COURSE INFORMATION

Course code	ARP 26612
Course title	Principles and Techniques of Planning
Pre-requisite(s)	None
Co-requisite	None
Credits	L:3 T:0 P:0 SL: 0
Class schedule per week	03
Class	M. Plan (Urban and Regional)
Semester / Level	I
Branch	Architecture and Planning
Name of Teacher	Dr. Rewati Raman

Course Objectives <i>This course aims to provide students with:</i>	
Sl No.	Objectives
A.	To understand the various concepts and categories of planning - economic, social and physical - and their integration at the national, state and local levels.
B.	To understand the tools and processes used to prepare spatial plans from site to regional scales, including their implementation and monitoring.

Course Outcomes (COs) <i>Upon successful completion of the course, students will be able to</i>	
CO	Course Outcomes
CO1.	Acquire knowledge of planning tools used in India, including land acquisition, Town Planning Schemes, Transit-Oriented Development and Accommodation Reservation.
CO2.	Demonstrate an understanding of the qualitative and quantitative data required for planning and the various methods used for data collection.
CO3.	Use and interpret spatial and non-spatial data through GIS, drones and statistical methods for data acquisition, analysis, mapping and interpretation.

Syllabus

<i>Module No.</i>	<i>Module name</i>	<i>Detailed Contents</i>	<i>No. of Lecture</i>
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; basic sequence of plan preparation from problem identification to spatial proposal.	7 Lectures
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; 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.	6 Lectures
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 and special economic zones; spatial scales of delineation - village, block, district, urban/city, metropolitan, meso and macro regions; need for delineation of planning areas; dynamic regions and tools for measuring spatial extent; administrative boundaries, urban agglomerations and dedicated planning zones; built-up-area studies using satellite imagery and drone surveys; structure of urban nodes, hierarchy, nesting and rank-size relationships.	6 Lectures
Module 4	Planning Surveys, Data Sources and Data Collection Methods	Techniques for physical surveys - land use, building use, building density and height, structural conditions, land utilisation and topography; identification of data requirements for urban and regional plans; 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	7 Lectures

		Agriculture and Ministry of Forests; secondary data from government and non-government agencies - Census of India, NSSO, CSO and NFHS; design of survey instruments; socio-economic data collection through questionnaires, interviews, mailed surveys, observer participation and focus groups; remote sensing, drones, mobile networks, sensors and smart devices; 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; residential and non-residential density studies; population analysis; economic-activity mapping; tabulation, editing and classification of data; graphical representation through pie charts, histograms, bar charts and log graphs; preparation of maps, tables and diagrams following professional conventions; isolines, choropleths, choro-schematic maps, scalograms, sociograms and flow diagrams; SWOT, threshold and input-output analyses; population forecasting and projection techniques; planning standards and benchmarks - URDPFI, RADPFI and SVAMITVA guidelines; spatial representation of planning proposals; data visualisation using digital tools and GIS platforms; integrated interpretation of spatial and non-spatial datasets; limitations and interpretation errors in spatial-data use.	7 Lectures

<i>Learning Resources</i>	
<i>Text Books</i>	<i>Reference Books</i>
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. and Diwan, G. R. (1994). Urban and Regional Planning: Principles, Practice and Law. Kopardekar, Talegaon, Maharashtra. T4. Goode, W. J. and Hatt, P. K. (1982). Methods in Social Research. McGraw-Hill, New York. T5. Gupta, S. P. (2022). Statistical Methods. Sultan Chand and Sons, New Delhi.	R1. Ministry of Urban Affairs and Employment (2014). Urban Development Plans Formulation and Implementation Guidelines. Government of India, New Delhi. R2. Fainstein, S. (2012). Readings in Planning Theory (3rd ed.). Blackwell Publishing, Oxford. R3. Campbell, S. and 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.

<i>Gaps in the Syllabus (to meet Industry/Profession requirements)</i>	Nil
<i>POs met through Gaps in the Syllabus</i>	Nil
<i>Topics beyond syllabus/Advanced topics/Design</i>	Nil
<i>POs met through Topics beyond syllabus/Advanced topics/Design</i>	Nil

Course Outcome (Co) Attainment Assessment Tools and Evaluation Procedure

<i>Direct Assessment</i>	<i>Assessment Tool</i>	<i>% Contribution during CO Assessment</i>		
	Continuous Internal Assessment	50%		
	Semester End Examination	50%		
	<i>Continuous Internal Assessment</i>	<i>% Distribution</i>		
	Best 2 Quiz marks out of 3 Quizzes of 15 marks each.	30%		
	Assignment(s)	10%		
	Seminar before a Committee	10%		
	<i>Assessment Components</i>	<i>CO1</i>	<i>CO2</i>	<i>CO3</i>
	Continuous Internal Assessment	✓	✓	✓
	Semester End Examination	✓	✓	✓

<i>Indirect Assessment</i>	1. Student Feedback on Faculty
	2. Student Feedback on Course Outcome

<i>Mapping Between Course Outcomes and Program Outcomes</i>						
CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	2	2	3	2	-
CO2	3	3	3	2	1	1
CO3	1	3	3	3	2	3

<i>Course Delivery Methods</i>	
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

<i>Mapping Between Course Outcomes and Course Delivery Method</i>	
Course Outcomes	Course Delivery Method
CO1	CD1
CO2	CD1, CD2, CD3
CO3	CD1, CD2, CD3, CD4, CD5

<i>Course Designers</i>		
<i>Experts from Industry</i>	<i>Experts from Higher Technical Institutions</i>	<i>Internal Experts</i>
		✓

COURSE INFORMATION

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

Course Objectives <i>This course aims to provide students with:</i>	
Sl No.	Objectives
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 (COs) <i>Upon successful completion of the course, students will be able to</i>	
CO	Course Outcomes
CO1	Analyze the existing housing situation in a city
CO2	Show familiarity with national housing policies and other related housing provisions.
CO3	Demonstrate an understanding of the relationships between housing markets, housing standards and incomes.
CO4	Develop knowledge about housing needs for the poor in India.
CO5	Develop knowledge about housing programmes and projects for the poor and their outcomes.

Syllabus

Module No.	Module name	Detailed Contents	No. of Lectures
Module 1	Foundations of Ethics and Human Values	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.	8 Lectures
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.	6 Lectures
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).	8 Lectures
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.	6 Lectures
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.	6 Lectures

Learning Resources	
Text Books	Reference 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	R1 - Financing of Housing and community Improvement Programmers / United Nation R2 - Poulouse 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)	Recent programmes and policies along with case studies have been introduced.
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 Outcome (Co) Attainment Assessment Tools and Evaluation Procedure

Direct Assessment	Assessment Tool	% Contribution during CO Assessment				
	Continuous Internal Assessment	50%				
	Semester End Examination	50%				
	Continuous Internal Assessment	% Distribution				
	Best 2 Quiz marks out of 3 Quizzes of 15 marks each.	30%				
	Assignment(s)	10%				
	Seminar before a Committee	10%				
	Assessment Components	CO1	CO2	CO3	CO4	CO5
	Continuous Internal Assessment	✓	✓	✓	✓	✓
	Semester End Examination	✓	✓	✓	✓	✓

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

Mapping Between Course Outcomes and Program Outcomes						
CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	2	1	2	2	2	1
CO2	2	-	3	1	3	2
CO3	3	3	3	2	2	2
CO4	3	3	3	3	3	3
CO5	3	3	3	3	3	3

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 (SL) such as use of NPTEL materials and internets
CD7	Simulation
Mapping Between Course Outcomes and Course Delivery Method	
Course Outcomes	Course Delivery Method
CO1	CD1, CD2
CO2	CD1, CD2, CD3
CO3	CD1, CD2, CD3
CO4	CD1, CD2, CD3
CO5	CD1, CD2, CD5

Course Designers		
Experts from Industry	Experts from Higher Technical Institutions	Internal Experts
		✓

COURSE INFORMATION

Course code	ARP 26614
Course title	Infrastructure Planning
Pre-requisite(s)	None
Co-requisite	None
Credits	L: 2 T: 0 P: 0 SL: 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 <i>This course aims to provide students with:</i>	
Sl No.	Objectives
A.	To understand economic, political, cultural, social and other forces shaping built environments in history.
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 (COs) <i>Upon successful completion of the course, students will be able to</i>	
CO	Course Outcomes
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 No.	Module name	Detailed Contents	No. of Lecture
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.	6 Lectures
Module 2	Infrastructure Planning Process	History of infrastructure: significance of infrastructure and its 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	9 Lectures
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.	10 Lectures
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.	8 Lectures
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).	6 Lectures

<i>Learning Resources</i>	
<i>Text Books</i>	<i>Reference Books</i>
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	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

<i>Gaps in the Syllabus (to meet Industry/Profession requirements)</i>	Nil
<i>Pos met through Gaps in the Syllabus</i>	Nil
<i>Topics beyond syllabus/Advanced topics/Design</i>	Nil
<i>Pos met through Topics beyond syllabus/Advanced topics/Design</i>	Nil

Course Outcome (Co) Attainment Assessment Tools and Evaluation Procedure

Direct Assessment	Assessment Tool	%Contribution during CO Assessment				
	Continuous Internal Assessment	50%				
	Semester End Examination	50%				
	Continuous Internal Assessment	%Distribution				
	Best 2 Quiz marks out of 3Quizzes of 15 marks each.	30%				
	Assignment(s)	10%				
	Seminar before a Committee	10%				
	Assessment Components	CO1	CO2	CO3	CO4	
Continuous Internal Assessment	✓	✓	✓	✓		
Semester End Examination	✓	✓	✓	✓		

<i>Indirect Assessment</i>	1. Student Feedback on Faculty
	2. Student Feedback on Course Outcome

<i>MappingBetweenCourseOutcomesandProgramOutcomes</i>						
CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	2	1	1	2	1	2
CO2	2	2	2	2	2	2
CO3	2	1	1	1	2	2
CO4	3	2	3	2	2	3

<i>Course Delivery Methods</i>	
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 (SL) such as use of NPTEL materials and internets

CD7	Simulation
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<i>Mapping Between Course Outcomes and Course Delivery Method</i>	
Course Outcomes	Course Delivery Method
CO1	CD1, CD2, CD3
CO2	CD1, CD2, CD3
CO3	CD1, CD2, CD3
CO4	CD1, CD2, CD3

<i>Course Designers</i>		
<i>Experts from Industry</i>	<i>Experts from Higher Technical Institutions</i>	<i>Internal Experts</i>
		✓



COURSE INFORMATION

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

Course Objectives <i>This course aims to provide students with:</i>	
Sl No.	Objectives
A.	To understand fundamental concepts, processes, and importance of transportation planning.
B.	To develop competence in traffic data collection, surveys, and interpretation.
C.	To understand travel demand modeling and transport system analysis.
D.	To appreciate transport system design, operations, management, and evaluation.
E.	To understand land use–transport integration, smart growth, and TOD for sustainable urban development.

Course Outcomes (COs) <i>Upon successful completion of the course, students will be able to</i>	
CO	Course Outcomes
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 No.	Module name	Detailed Contents	No. of Lectur e
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	6 Lectures
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	6 Lectures
Module 3	Travel Demand Modeling 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 modeling: 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	6 Lectures
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	6 Lectures
Module 5	Land Use Planning and	Relationship between land use and transportation systems; Land use–transport interaction and integration concepts; Land use models: concept and applications; Lowry Model: structure,	6 Lectures

	Transport Integration	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	
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<i>Learning Resources</i>	
<i>Text Books</i>	<i>Reference Books</i>
T1 Kadiyali, L. R. (2014). Traffic Engineering and Transport Planning. Khanna Publishers, New Delhi.	R1 Ministry of Housing and Urban Affairs (2017). National Transit Oriented Development Policy. Government of India.
T2 Vuchic, V. R. (2005). Urban Transit: Operations, Planning & Economics. John Wiley & Sons.	R2 Tumlin, J. (2012). Sustainable Transportation Planning. Wiley.
T3 O'Flaherty Coleman A. (1997). Transport Planning and Traffic Engineering. CRC Press, Taylor and Francis Group.	R3 Cao, X. J., Ding, C., & Yang, J. (2022). Urban Transport and Land Use Planning. Academic Press.
T4 Mitchell, R. B. & Rapkin, C. (1954). Urban Traffic: A Function of Land Use. Columbia University Press.	R4 Asian Development Bank (2022). Transit-Oriented Development and Land Value Capture in India. ADB, Manila.
T5 Rodrigue, J.-P., Comtois, C., & Slack, B. (2006). The Geography of Transport Systems. Routledge.	R5 Schoeman, C. B. (2015). Land Use Management and Transportation Planning. WIT Press.
	R6 João de Abreu e Silva (2023). Handbook on Transport and Land Use. Edward Elgar Publishing.

<i>Gaps in the Syllabus (to meet Industry/Profession requirements)</i>	Nil
<i>Pos met through Gaps in the Syllabus</i>	Nil
<i>Topics beyond syllabus/Advanced topics/Design</i>	Nil

<i>Pos met through Topics beyond syllabus/Advanced topics/Design</i>	Nil
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Course Outcome (Co) Attainment Assessment Tools and Evaluation Procedure

<i>Direct Assessment</i>	<i>Assessment Tool</i>	<i>% Contribution during CO Assessment</i>				
	Continuous Internal Assessment	50%				
	Semester End Examination	50%				
	<i>Continuous Internal Assessment</i>	<i>% Distribution</i>				
	Best 2 Quiz marks out of 3 Quizzes of 15 marks each.	30%				
	Assignment(s)	10%				
	Seminar before a Committee	10%				
	<i>Assessment Components</i>	<i>CO1</i>	<i>CO2</i>	<i>CO3</i>	<i>CO4</i>	<i>CO5</i>
	Continuous Internal Assessment	✓	✓	✓	✓	✓
	Semester End Examination	✓	✓	✓	✓	✓

<i>Indirect Assessment</i>	1. Student Feedback on Faculty
	2. Student Feedback on Course Outcome

<i>Mapping Between Course Outcomes and Program Outcomes</i>						
<i>CO</i>	<i>PO1</i>	<i>PO2</i>	<i>PO3</i>	<i>PO4</i>	<i>PO5</i>	<i>PO6</i>
<i>CO1</i>	3	2	1	1	1	2
<i>CO2</i>	2	3	1	3	1	2
<i>CO3</i>	3	3	2	3	1	2
<i>CO4</i>	3	2	3	2	2	2
<i>CO5</i>	3	2	3	2	3	2

<i>Course Delivery Methods</i>	
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 (SL) such as use of NPTEL materials and internets
CD7	Simulation

<i>Course Designers</i>		
<i>Experts from Industry</i>	<i>Experts from Higher Technical Institutions</i>	<i>Internal Experts</i>
		✓

<i>Mapping Between Course Outcomes and Course Delivery Method</i>	
Course Outcomes	Course Delivery Method
CO1	CD1, CD2
CO2	CD1, CD2, CD5, CD6
CO3	CD1, CD2, CD6
CO4	CD1, CD2, CD6
CO5	CD1, CD2, CD6

COURSE INFORMATION

Course code	ARP 26616
Course title	Environmental Studies and Planning
Pre-requisite(s)	None
Co-requisite	None
Credits	L:2 T:0 P:0 SL: 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	
<i>This course aims to provide students with:</i>	
Sl No.	Objectives
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 (COs)	
<i>Upon successful completion of the course, students will be able to</i>	
CO	Course Outcomes
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

<i>Module No.</i>	<i>Module name</i>	<i>Detailed Contents</i>	<i>No. of Lecture</i>
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.	9 Lectures
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.	6 Lectures
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.	6 Lectures
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.	5 Lectures
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.	10 Lectures

Learning Resources

<i>Text Books</i>	<i>Reference Books</i>
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	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 - 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:

Environmental Planning, Blackwell Publishing. T4 - Bahuguna, S., Natraj, Environment Crisis and Sustainable Development, Dehradun,	Earthscan. (pp.9-32) R5 - 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. R6 - Kennedy, C., Ibrahim, N. & Hoorn Weg, D. Low-carbon infrastructure strategies for cities. <i>Nature Clim Change</i> 4, 343-346 (2014). https://doi.org/10.1038/nclimate2160
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<i>Gaps in the Syllabus (to meet Industry/Profession requirements)</i>	Nil
<i>Pos met through Gaps in the Syllabus</i>	Nil
<i>Topics beyond syllabus/Advanced topics/Design</i>	Nil
<i>Pos met through Topics beyond syllabus/Advanced topics/Design</i>	Nil

Course Outcome (Co) Attainment Assessment Tools and Evaluation Procedure

<i>Direct Assessment</i>	<i>Assessment Tool</i>	<i>% Contribution during CO Assessment</i>				
	Continuous Internal Assessment	50%				
	Semester End Examination	50%				
	<i>Continuous Internal Assessment</i>	<i>% Distribution</i>				
	Best 2 Quiz marks out of 3 Quizzes of 15 marks each.	30%				
	Assignment(s)	10%				
	Seminar before a Committee	10%				
	<i>Assessment Components</i>	<i>CO1</i>	<i>CO2</i>	<i>CO3</i>	<i>CO4</i>	
	Continuous Internal Assessment	✓	✓	✓	✓	

	Semester End Examination	✓	✓	✓	✓	
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Indirect Assessment	1. Student Feedback on Faculty
	2. Student Feedback on Course Outcome

Mapping Between Course Outcomes and Program Outcomes						
CO	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

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 (SL) such as use of NPTEL materials and internets
CD7	Simulation

Mapping Between Course Outcomes and Course Delivery Method	
Course Outcomes	Course Delivery Method
CO1	CD1, CD2, CD3
CO2	CD1, CD2, CD3
CO3	CD1, CD2, CD3
CO4	CD1, CD2, CD3

Course Designers		
Experts from Industry	Experts from Higher Technical Institutions	Internal Experts
		✓

COURSE INFORMATION

Course code	ARP 26617
Course title	Urban Design
Pre-requisite(s)	None
Co-requisite	None
Credits	L:2 T:0 P:0 SL: 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 aims to provide students with:

Sl No.	Objectives
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 (COs)

Upon successful completion of the course, students will be able to

CO	Course Outcomes
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 No.	Module name	Detailed Contents	No. of Lecture
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.	10 Lectures
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.	8 Lectures
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.	8 Lectures
Module 4	Urban Design Proposal & Detailing	Detailed design of selected precincts/zones; Design of public spaces, edge treatments, and landmarks; Mobility corridors; Streetscape design, furniture, lighting, and landscape elements; Integration of urban design guidelines and planning controls.	8 Lectures
Module 5	Legal Frameworks, Presentation & Review	Development controls, zoning bylaws, UD guidelines (city-specific); Integration of legal tools; Final documentation and presentation.	6 Lectures

Learning Resources

Text Books	Reference Books
T1: Carmona, M., Heath, T., Oc, T., & Tiesdell, S. (2010). <i>Public places, urban spaces: The dimensions of urban design</i> (2nd ed.). Routledge. T2: Lang, J. (2005). <i>Urban design: A typology of procedures and products</i>. Routledge. T3: Lynch, K. (1960). <i>The image of the city</i>. MIT Press. T4: Gehl, J. (2011). <i>Life between buildings: Using public space</i>. Island Press. T5: Trancik, R. (1986). <i>Finding lost space: Theories of urban design</i>. Wiley. T6: UN-Habitat Urban Design Compendium T7: Urban Design Group Manual (UK) T8: National Urban Design Guidelines (India) – Ministry of Housing & Urban Affairs (MoHUA)	R1: Alexander, C., Ishikawa, S., & Silverstein, M. (1977). <i>A pattern language: Towns, buildings, construction</i>. Oxford University Press. R2: Barnett, J. (2003). <i>Redesigning cities: Principles, practice, implementation</i>. Planners Press. R3: Cullen, G. (1961). <i>The concise townscape</i>. Architectural Press. R4: Moughtin, C. (2003). <i>Urban design: Street and square</i> (3rd ed.). Routledge. R5: American Planning Association. (2006). <i>Planning and urban design standards</i>. Wiley

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Gaps in the Syllabus (to meet Industry/Profession requirements)	Field-based application has been introduced in the revised syllabus
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 Outcome (Co) Attainment Assessment Tools and Evaluation Procedure

Direct Assessment	Assessment Tool	% Contribution during CO Assessment				
	Continuous Internal Assessment	50%				
	Semester End Examination	50%				
	Continuous Internal Assessment	% Distribution				
	Best 2 Quiz marks out of 3 Quizzes of 15 marks each.	30%				
	Assignment(s)	10%				
	Seminar before a Committee	10%				
	Assessment Components	CO1	CO2	CO3	CO4	CO5
	Continuous Internal Assessment	✓	✓	✓	✓	✓
	Semester End Examination	✓	✓	✓	✓	✓

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

Mapping Between Course Outcomes and Program Outcomes						
CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	1	1	3	2	1
CO2	1	3	2	1	1	1

CO3	1	1	1	3	3	1
CO4	1	1	3	1	1	3
CO5	1	1	3	1	3	1

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 (SL) such as use of NPTEL materials and internets
CD7	Simulation

Mapping Between Course Outcomes and Course Delivery Method	
Course Outcomes	Course Delivery Method
CO1	CD1, CD2,CD7
CO2	CD1,CD2,CD4,CD7
CO3	CD3,CD5,CD7
CO4	CD7
CO5	CD1,CD2,CD4

Course Designers		
Experts from Industry	Experts from Higher Technical Institutions	Internal Experts
		✓

COURSE INFORMATION

Course code	ARP 26618
Course title	Urban Regeneration & Conservation
Pre-requisite(s)	NIL
Co-requisite	NIL
Credits	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 <i>This course aims to provide students with:</i>	
Sl No.	Objectives
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 (COs) <i>Upon successful completion of the course, students will be able to</i>	
CO	Course Outcomes
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

<i>Module No.</i>	<i>Module name</i>	<i>Detailed Contents</i>	<i>No. of Lecture</i>
Module 1	Introduction to Urban Conservation	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.	4 Lectures
Module 2	Introduction to Urban Regeneration	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.	4 Lectures
Module 3	Urban Regeneration and Conservation Strategies	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.	6 Lectures
Module 4	Planning Processes for Urban Regeneration and Conservation	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.	6 Lectures
Module 5	Legal and Policy Frameworks for Urban Conservation and Regeneration	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.	4 Lectures

<i>Learning Resources</i>	
<i>Text Books</i>	<i>Reference Books</i>
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.	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)

<i>Gaps in the Syllabus (to meet Industry/Profession requirements)</i>	Nil
<i>Pos met through Gaps in the Syllabus</i>	Nil
<i>Topics beyond syllabus/Advanced topics/Design</i>	Nil
<i>Pos met through Topics beyond syllabus/Advanced topics/Design</i>	Nil

Course Outcome (Co) Attainment Assessment Tools and Evaluation Procedure

<i>Direct Assessment</i>	<i>Assessment Tool</i>	<i>% Contribution during CO Assessment</i>
	Continuous Internal Assessment	50%

	Semester End Examination	50%				
	Continuous Internal Assessment	% Distribution				
	Best 2 Quiz marks out of 3 Quizzes of 15 marks each.	30%				
	Assignment(s)	10%				
	Seminar before a Committee	10%				
	Assessment Components	CO1	CO2	CO3		
	Continuous Internal Assessment	✓	✓	✓		
	Semester End Examination	✓	✓	✓		

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

Mapping Between Course Outcomes and Program Outcomes						
CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	2	2	3	2	2
CO2	3	3	3	1	2	1
CO3	1	3	3	2	3	3

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	Site visits/in-plant training
CD6	Self- learning (SL), such as use of NPTEL materials and the internet
CD7	Simulation

Mapping Between Course Outcomes and Course Delivery Method	
Course Outcomes	Course Delivery Method
CO1	CD1, CD6
CO2	CD1, CD2, CD6

CO3	CD1, CD2, CD6
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<i>Course Designers</i>		
<i>Experts from Industry</i>	<i>Experts from Higher Technical Institutions</i>	<i>Internal Experts</i>
		✓



COURSE INFORMATION

Course code	HS24131
Course title	Communication Skills I
Pre-requisite(s)	None
Co-requisite	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 aims to provide students with:

Sl No.	Objectives
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 (COs)

Upon successful completion of the course, students will be able to

CO	Course Outcomes
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

<i>Module No.</i>	<i>Module name</i>	<i>Detailed Contents</i>	<i>No. of Lecture</i>
Module – I	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.	7 Lectures
Module – II	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.	7 Lectures

Module – III	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.	7 Lectures
Module – IV	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.	7 Lectures

		- Create a resume. - Develop an essay. - Write a narrative account, whether personal or about others. - Produce a news column.	
Module – V	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	7 Lectures

<i>Learning Resources</i>	
<i>Text Books</i>	<i>Reference Books</i>
T1: Communication Skills (2015) 2nd edition, Sanjay Kumar & Pushp Lata, Oxford University Press T2: Business Correspondence and Report Writing (2017), R.C.Sharma, Krishna Mohan. McGraw Hill	R1: Basic Business Communication-(2004). Lesikar I Flatley, McGraw Hill R2: Business Communication Today, (2017), Bovee, Thill and Chatterjee, Pearson R3: Krishnan, M, & Jha, S.(2024). <i>Focus: A course in Communication Skills</i>. Cambridge University Press

	R4: Suparna Dutta, 2013 Business Communication, PHI Learning Pvt Ltd, New Delh
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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 Outcome (Co) Attainment Assessment Tools and Evaluation Procedure

Direct Assessment	Assessment Tool	% Contribution during CO Assessment				
	Continuous Internal Assessment					
	Semester End Examination					
	Continuous Internal Assessment	% Distribution				
	Best 2 Quiz marks out of 3 Quizzes of 15 marks each.					
	Assignment(s)					
	Seminar before a Committee					
	Assessment Components	CO1	CO2	CO3	CO4	CO5
	Continuous Internal Assessment					
	Semester End Examination					

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

Mapping Between Course Outcomes and Program Outcomes						
CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1						
CO2						
CO3						

<i>Course Delivery Methods</i>	
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

<i>Course Designers</i>		
<i>Experts from Industry</i>	<i>Experts from Higher Technical Institutions</i>	<i>Internal Experts</i>
		✓

<i>Mapping Between Course Outcomes and Course Delivery Method</i>	
<i>Course Outcomes</i>	<i>Course Delivery Method</i>
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

COURSE INFORMATION

Course code	ARP 26621
Course title	Planning Studio -Local Area Planning Using Socio-Economic Tools
Pre-requisite(s)	None
Co-requisite	None
Credits 05	L: 0 T: 0 P: 10
Class schedule per week	10
Class	M.Plan
Semester / Level	1
Branch	Architecture & Planning
Name of Teacher	Dr. Satyaki Sarkar

Course Objectives <i>This course aims to provide students with:</i>	
SI No.	Objectives
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 (COs) <i>Upon successful completion of the course, students will be able to</i>	
CO	Course Outcomes
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

<i>Module No.</i>	<i>Module name</i>	<i>Detailed Contents</i>	<i>No. of Lecture</i>
1	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.	10 Lectures
2	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.	10 Lectures
3	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.	10 Lectures
4	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.	10 Lectures

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

Learning Resources	
Text Books	Reference Books
T1 - Clara Greed (2020): <i>Introducing Planning: Transitions to Sustainability and Socio-Economic Justice</i> .	R1 - URDPFI Guidelines (2014): <i>Urban and Regional Development Plans Formulation and Implementation</i> , Ministry of Housing and Urban Affairs, Govt. of India. R2 - The World Bank: <i>The Local Economic Development (LED) Series</i> for community-based economic strategies.
T2 - Jan Gehl (2011): <i>Life Between Buildings: Using Public Space</i> (Crucial for micro-level spatial analysis).	
T3 - N.V. Ratnam (2019): <i>Socio-Economic Surveys in Planning</i> (For methodology on primary data collection).	

<i>Gaps in the Syllabus (to meet Industry/Profession requirements)</i>	Nil
<i>Pos met through Gaps in the Syllabus</i>	Nil
<i>Topics beyond syllabus/Advanced topics/Design</i>	Nil
<i>Pos met through Topics beyond syllabus/Advanced topics/Design</i>	Nil

Course Outcome (Co) Attainment Assessment Tools and Evaluation Procedure

Assessment Tool	% Contribution during CO Assessment
Lab Quiz-1	10
Lab Quiz-2	10
Lab Viva	20
Day-to-Day Progressive Evaluation	30
End-Sem Performance	30

Direct Assessment	Assessment Tool	% Contribution during CO Assessment		
	Day-to-Day Progressive Evaluation	20		
	End-Sem Performance	30		
	Continuous Internal Assessment	% Distribution		
	Lab Quiz-1	10		
	Lab Quiz-2	10		
	Lab Viva	20		
	Assessment Components	CO1	CO2	CO3
	Continuous Internal Assessment	√	√	√
	Semester End Examination	√	√	√

Indirect Assessment	

Mapping Between Course Outcomes and Program Outcomes						
CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	2	2	3	2	1
CO2	3	3	3	2	1	1
CO3	1	3	3	3	2	3

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 (SL) such as use of NPTEL materials and internets
CD7	Simulation

Mapping Between Course Outcomes and Course Delivery Method	
Course Outcomes	Course Delivery Method
CO1	CD1, CD2, CD3
CO2	CD2, CD3, CD4
CO3	CD3, CD5, CD7

Course Designers		
Experts from Industry	Experts from Higher Technical Institutions	Internal Experts
		✓

COURSE INFORMATION

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

Course Objectives <i>This course aims to provide students with:</i>	
SI No.	Objectives
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 (COs) <i>Upon successful completion of the course, students will be able to</i>	
CO	Course Outcomes
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

<i>Module No.</i>	<i>Module name</i>	<i>Detailed Contents</i>	<i>No. of Lecture</i>
Module 1	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.	8 Lectures
Module 2	Remote sensing data sources:	Various national and international satellite systems for remote sensing; platforms for sourcing remote sensing data; data formats, types, and extraction.	12 Lectures
Module 3	Image Processing:	Visual Image Interpretation; Raster data Analysis; Digital Image processing; Unsupervised classification; Supervised classification; Spatial Database Management Systems.	12 Lectures
Module 4	Mapping and Analysis:	Land-use and land-cover change detection; hydrological analysis; DEM-based environmental mapping and analysis.	12 Lectures
Module 5	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.	12 Lectures

Learning Resources

<i>Text Books</i>	<i>Reference Books</i>
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.	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.
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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 Outcome (Co) Attainment Assessment Tools and Evaluation Procedure

Direct Assessment	Assessment Tool	% Contribution during CO Assessment				
	Continuous Internal Assessment	50%				
	Semester End Examination	50%				
	Continuous Internal Assessment	% Distribution				
	Best 2 Quiz marks out of 3 Quizzes of 15 marks each.	30%				
	Assignment(s)	10%				
	Seminar before a Committee	10%				
	Assessment Components	CO1	CO2			
	Continuous Internal Assessment	✓	✓			
	Semester End Examination	✓	✓			
Indirect Assessment	1. Student Feedback on Faculty					
	2. Student Feedback on Course Outcome					

Mapping Between Course Outcomes and Program Outcomes						
CO	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	2	3	2	3	1	2
CO 2	3	2	3	3	1	2

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 (SL) such as use of NPTEL materials and internets
CD7	Simulation

Mapping Between Course Outcomes and Course Delivery Method	
Course Outcomes	Course Delivery Method
CO1	CD1, CD2, CD3, CD4, CD6, CD7
CO2	CD1, CD2, CD3, CD4, CD6, CD7

Course Designers		
Experts from Industry	Experts from Higher Technical Institutions	Internal Experts
		✓



Sem II

COURSE INFORMATION

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

Course Objectives <i>This course aims to provide students with:</i>	
Sl No.	Objectives
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 (COs) <i>Upon successful completion of the course, students will be able to</i>	
CO	Course Outcomes
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

<i>Module No.</i>	<i>Module name</i>	<i>Detailed Contents</i>	<i>No. of Lecture</i>
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	10 lectures
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.	8 Lectures
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.	8 Lectures
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	8 Lectures
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	6 Lectures

Learning Resources

<i>Text Books</i>	<i>Reference Books</i>
T1 Aggarwalla Astha. (2011). Agglomeration Economies and Productivity Growth in India. Indian Institute of Management, Ahmadabad.	R1 Wheeler S. (2009). Regions, Mega regions, and Sustainability. Regional Studies, Vol. 43.6, pp. 863-876, Routledge Informa Ltd, England.

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	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.
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<i>Gaps in the Syllabus (to meet Industry/Profession requirements)</i>	Nil
<i>Pos met through Gaps in the Syllabus</i>	Nil
<i>Topics beyond syllabus/Advanced topics/Design</i>	Nil
<i>Pos met through Topics beyond syllabus/Advanced topics/Design</i>	Nil

Course Outcome (Co) Attainment Assessment Tools and Evaluation Procedure

<i>Direct Assessment</i>	<i>Assessment Tool</i>	<i>% Contribution during CO Assessment</i>
	Continuous Internal Assessment	50%
	Semester End Examination	50%
	<i>% Distribution</i>	
	<i>Continuous Internal Assessment</i>	
	Best 2 Quiz marks out of 3 Quizzes of 15 marks each.	30%
	Assignment(s)	10%
	Seminar before a Committee	10%

	Assessment Components	CO1	CO2	CO3	CO4
	Continuous Internal Assessment	✓	✓	✓	✓
	Semester End Examination	✓	✓	✓	✓

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

Mapping Between Course Outcomes and Program Outcomes						
CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	2	1	1	2	1	2
CO2	2	2	2	2	2	2
CO3	2	1	1	1	2	2
CO4	3	2	3	2	2	3

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 (SL) such as use of NPTEL materials and internets
CD7	Simulation

Mapping Between Course Outcomes and Course Delivery Method	
Course Outcomes	Course Delivery Method
CO1	CD1, CD2,CD3
CO2	CD1, CD2,CD3
CO3	CD1, CD2,CD3
CO4	CD1, CD2,CD3

<i>Course Designers</i>		
<i>Experts from Industry</i>	<i>Experts from Higher Technical Institutions</i>	<i>Internal Experts</i>
		✓



COURSE INFORMATION

Course code	ARP 26652
Course title	Regional Planning
Pre-requisite(s)	None
Co-requisite	None
Credits	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 <i>This course aims to provide students with:</i>	
Sl No.	Objectives
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 (COs) <i>Upon successful completion of the course, students will be able to</i>	
CO	Course Outcomes
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

<i>Module No.</i>	<i>Module name</i>	<i>Detailed Contents</i>	<i>No. of Lecture</i>
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.	7 Lectures
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).	7 Lectures
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.	7 Lectures
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.	7 Lectures

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.	7 Lectures
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<i>Learning Resources</i>	
<i>Text Books</i>	<i>Reference Books</i>
T1 Social Sciences. I. Rengasamy S. (2009). Types of Regions and Regionalization of India. Madurai Institute T2 Wheeler S. (2009). Regions, Mega regions, and Sustainability. Taylor and Francis, New York. T3 Department of Town and Country Planning (2005). Decentralised Development Plan Government of Kerala, Thiruvananthapuram. T4 United Nation Development Program (2008). Decentralised Development Plan. UNDP, New Delhi. T5 GIZ (2018). Regional Development Guidelines: Urban Vertical, Technical Collaboration with Government of India & Germany, New Delhi. T6 Walter Isard (1975). Introduction to Regional Science. Prentice Hall, New Jersey. T7 Ghosh T.K. and Satyen Sarkar (2022). Regional Disparities in Economic Development: Policies and Prospects for Balanced Development. Serials Publications Pvt. Ltd., New Delhi.	R1 The World Bank (2009). New Economic Geography. Washington DC. R2 Nallari Raj, Breda Griffith, and Shahid Yusuf (2012). Geography of Growth: Spatial Economics and Competitiveness. The World Bank, Washington DC. R3 Tukker Arnold, and Erik Dietzenbacher. (2013). Global Multiregional Input-Output Frameworks: An Introduction and Outlook. Taylor and Francis, New York. R4 Board N.C.R.P. Regional Plan (2021). National Capital Region. Government of India, New Delhi. R5 Ministry of Panchayati Raj. (2021). Rural Area Development, Formulation, Policy, Government of India. R6 Ministry of Panchayati Raj. (2022). SVAMITVA. Government of India. R7 Jiwan J. (2021). Regional Development and Planning. Rawat Publications, New Delhi. R8 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.

<i>Gaps in the Syllabus (to meet Industry/Profession requirements)</i>	Nil
<i>Pos met through Gaps in the Syllabus</i>	Nil
<i>Topics beyond syllabus/Advanced topics/Design</i>	Nil

<i>Pos met through Topics beyond syllabus/Advanced topics/Design</i>	Nil
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Course Outcome (Co) Attainment Assessment Tools and Evaluation Procedure

<i>Direct Assessment</i>	<i>Assessment Tool</i>	<i>% Contribution during CO Assessment</i>				
	Continuous Internal Assessment	50%				
	Semester End Examination	50%				
	<i>Continuous Internal Assessment</i>	<i>% Distribution</i>				
	Best 2 Quiz marks out of 3 Quizzes of 15 marks each.	30%				
	Assignment(s)	10%				
	Seminar before a Committee	10%				
	<i>Assessment Components</i>	<i>CO1</i>	<i>CO2</i>	<i>CO3</i>	<i>CO4</i>	<i>CO5</i>
	Continuous Internal Assessment	✓	✓	✓	-	-
	Semester End Examination	✓	✓	✓	-	-

<i>Indirect Assessment</i>	1. Student Feedback on Faculty
	2. Student Feedback on Course Outcome

<i>Mapping Between Course Outcomes and Program Outcomes</i>						
CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	2	2	3	2	1
CO2	3	3	2	2	3	2
CO3	3	3	3	2	2	2

<i>Course Delivery Methods</i>	
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 (SL) such as use of NPTEL materials and internets
CD7	Simulation

<i>Course Designers</i>		
<i>Experts from Industry</i>	<i>Experts from Higher Technical Institutions</i>	<i>Internal Experts</i>
		✓

<i>Mapping Between Course Outcomes and Course Delivery Method</i>	
Course Outcomes	Course Delivery Method
CO1	CD1, CD6
CO2	CD1, CD2, CD6
CO3	CD1, CD2, CD6

COURSE INFORMATION

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

Course Objectives <i>This course aims to provide students with:</i>	
SI No.	Objectives
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 (COs) <i>Upon successful completion of the course, students will be able to</i>	
CO	Course Outcomes
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

<i>Module No.</i>	<i>Module name</i>	<i>Detailed Contents</i>	<i>No. of Lecture</i>
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).	6 Lectures
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.	4 Lectures
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	9 Lectures
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.	5 Lectures
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	4 Lectures

		innovative applications; Integration of multi-method approaches (Mixed Methods Research).	
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<i>Learning Resources</i>	
<i>Text Books</i>	<i>Reference Books</i>
T1. Kothari, C. R. (2009) – Research Methodology – Methods and Techniques, New Age International Publishers.	R1. Silva, A. E., Heasley, P., Harries, N., Broeck, P. V. (2015) – The Routledge Handbook of Planning Research Methods, Routledge Taylor & Francis.
T2. Ewing, R. and Park, K. (2020) – Basic Quantitative Research Methods for Urban Planners, Routledge Taylor & Francis.	R2. Jonker, J. and Pennink, B. (2010) – The Essence of Research Methodology: A Concise Guide for Master and PhD Students in Management Science, Springer.
T3. Wang, X. and Hofe V. R. (2007) – Research Methods in Urban and Regional Planning, Springer.	R3. Scruggs, T. E. and Mastropieri, M. A. (2006) – Applications of Research Methodology, Elsevier.

<i>Gaps in the Syllabus (to meet Industry/Profession requirements)</i>	Nil
<i>Pos met through Gaps in the Syllabus</i>	Nil
<i>Topics beyond syllabus/Advanced topics/Design</i>	Nil
<i>Pos met through Topics beyond syllabus/Advanced topics/Design</i>	Nil

Course Outcome (Co) Attainment Assessment Tools and Evaluation Procedure

<i>Direct Assessment</i>	<i>Assessment Tool</i>	<i>% Contribution during CO Assessment</i>
	Continuous Internal Assessment	50%
	Semester End Examination	50%
	<i>Continuous Internal Assessment</i>	<i>% Distribution</i>
	Best 2 Quiz marks out of 3 Quizzes of 15 marks each.	30%

	Assignment(s)	10%				
	Seminar before a Committee	10%				
	<i>Assessment Components</i>	<i>CO1</i>	<i>CO2</i>	<i>CO3</i>	<i>CO4</i>	<i>CO5</i>
	Continuous Internal Assessment	✓	✓	✓	✓	✓
	Semester End Examination	✓	✓	✓	✓	✓

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

Mapping Between Course Outcomes and Program Outcomes						
CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	2	2	1	2	1	2
CO2	2	3	2	3	1	2
CO3	2	3	2	3	1	2
CO4	2	2	2	3	1	3

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 (SL) such as use of NPTEL materials and internets
CD7	Simulation

Mapping Between Course Outcomes and Course Delivery Method	
Course Outcomes	Course Delivery Method
CO1	CD1, CD2
CO2	CD1, CD2, CD6
CO3	CD1, CD2, CD6
CO4	CD1, CD2, CD6
CO5	CD1, CD2, CD6

<i>Course Designers</i>		
<i>Experts from Industry</i>	<i>Experts from Higher Technical Institutions</i>	<i>Internal Experts</i>
		✓



COURSE INFORMATION

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

Course Objectives <i>This course aims to provide students with:</i>	
Sl No.	Objectives
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, SVAMITVA 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 (COs) <i>Upon successful completion of the course, students will be able to</i>	
CO	Course Outcomes
CO1	Understand ethical principles guiding planning professionals and public institutions
CO2	Apply human values in inclusive and sustainable urban development.
CO3	Interpret constitutional provisions related to rights, justice and equality in planning contexts.
CO4	Demonstrate ethical reasoning in real urban governance and development scenarios.

Syllabus

Module No.	Module name	Detailed Contents	No. of Lecture
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.	6 Lectures
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.	8 Lectures
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).	8 Lectures
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.	8 Lectures
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.	6 Lectures

Learning Resources

Text Books	Reference Books
T1. Constitution of India – Government of India T2. R. K. Arora – <i>Ethics in Governance</i> T3. Mike Jenks & Colin Jones – <i>Dimensions of the Sustainable City</i>	R1. UN-Habitat – <i>Urban Planning for Sustainable Development</i> Government of India – National Urban Policy and Planning Documents

<i>Gaps in the Syllabus (to meet Industry/Profession requirements)</i>	Nil
<i>Pos met through Gaps in the Syllabus</i>	Nil
<i>Topics beyond syllabus/Advanced topics/Design</i>	Nil
<i>Pos met through Topics beyond syllabus/Advanced topics/Design</i>	Nil

Course Outcome (Co) Attainment Assessment Tools and Evaluation Procedure

<i>Direct Assessment</i>	<i>Assessment Tool</i>	<i>% Contribution during CO Assessment</i>				
	Continuous Internal Assessment	50%				
	Semester End Examination	50%				
	<i>Continuous Internal Assessment</i>	<i>% Distribution</i>				
	Best 2 Quiz marks out of 3 Quizzes of 15 marks each.	30%				
	Assignment(s)	10%				
	Seminar before a Committee	10%				
	<i>Assessment Components</i>	<i>CO1</i>	<i>CO2</i>	<i>CO3</i>	<i>CO4</i>	<i>CO5</i>
	Continuous Internal Assessment	✓	✓	✓	✓	✓
	Semester End Examination	✓	✓	✓	✓	✓

<i>Indirect Assessment</i>	1. Student Feedback on Faculty
	2. Student Feedback on Course Outcome

<i>Mapping Between Course Outcomes and Program Outcomes</i>						
CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	2	1	1	2	1	2
CO2	2	2	2	2	2	2
CO3	2	1	1	1	2	2
CO4	3	2	3	2	2	3

<i>Course Delivery Methods</i>	
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 (SL) such as use of NPTEL materials and internets
CD7	Simulation

<i>Mapping Between Course Outcomes and Course Delivery Method</i>	
Course Outcomes	Course Delivery Method
CO1	CD1, CD2
CO2	CD1, CD2, CD3
CO3	CD1, CD2, CD3
CO4	CD1, CD2, CD3, CD4

<i>Course Designers</i>		
<i>Experts from Industry</i>	<i>Experts from Higher Technical Institutions</i>	<i>Internal Experts</i>
		✓

COURSE INFORMATION

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

Course Objectives <i>This course aims to provide students with:</i>	
SI No.	Objectives
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 (COs) <i>Upon successful completion of the course, students will be able to</i>	
CO	Course Outcomes
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

<i>Module No.</i>	<i>Module name</i>	<i>Detailed Contents</i>	<i>No. of Lecture</i>
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.	8 Lectures
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.	6 Lectures
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.	8 Lectures
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	8 Lectures

		(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.	10 Lectures

<i>Learning Resources</i>	
<i>Text Books</i>	<i>Reference Books</i>
T1: Sethi V.K. (2007). Infrastructure Development in India. New Century Publications, New Delhi. T2: 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. T3: National Institute of Urban Affairs (1997). Financing Urban Infrastructure in India: Research Study Series 59. NIUA, New Delhi. T4: Venugopal R.A. (2009). State of Urban services in Indian cities. Oxford University Press, New Delhi.	R1: Ministry of Urban Affairs & Employment (2014). Urban & regional Development Plans Formulation and Implementation Guidelines. Government of India, New Delhi. R2: McLoughlin Brian J. (2019). Urban and Regional Planning: A Systems Approach. Rawat Publications, New Delhi. R3: Heathcott Joseph, Jonathan Soffer and Rae Zimmerman (2022). Urban Infrastructure: Historical and Social Dimensions of an Interconnected World. University of Pittsburgh Press, Pennsylvania. R4: Rana Muhammad Ehsan and Manoj Jayabalan (2023). Emerging Technologies for Digital Infrastructure Development. Bentham Books, Sharjah

<i>Gaps in the Syllabus (to meet Industry/Profession requirements)</i>	NA
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<i>Pos met through Gaps in the Syllabus</i>	1,4,5,6
<i>Topics beyond syllabus/Advanced topics/Design</i>	Nil
<i>Pos met through Topics beyond syllabus/Advanced topics/Design</i>	Nil

**Course Outcome (Co) Attainment Assessment Tools and Evaluation
Procedure**

Direct Assessment	Assessment Tool	% Contribution during CO Assessment				
	Continuous Internal Assessment	50%				
	Semester End Examination	50%				
	Continuous Internal Assessment	% Distribution				
	Best 2 Quiz marks out of 3 Quizzes of 15 marks each.	30%				
	Assignment(s)	10%				
	Seminar before a Committee	10%				
	Assessment Components	CO1	CO2	CO3	CO4	CO5
	Continuous Internal Assessment	✓	✓	✓	✓	✓
	Semester End Examination	✓	✓	✓	✓	✓

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

Mapping Between Course Outcomes and Program Outcomes						
CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	1	1	2	1
CO2	2	3	3	1	1	1
CO3	3	2	1	3	3	1
CO4	3	1	1	1	3	2
CO5	1	1	3	3	1	3

<i>Course Delivery Methods</i>	
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 (SL) such as use of NPTEL materials and internets
CD7	Simulation

<i>Mapping Between Course Outcomes and Course Delivery Method</i>	
Course Outcomes	Course Delivery Method
CO1	CD1, CD2,CD3,CD6
CO2	CD1,CD2,CD5
CO3	CD1,CD3,CD5
CO4	CD1,CD2
CO5	CD1,CD2,CD4

<i>Course Designers</i>		
<i>Experts from Industry</i>	<i>Experts from Higher Technical Institutions</i>	<i>Internal Experts</i>
		✓

COURSE INFORMATION

Course code	ARP 26656
Course title	Transport Corridors and Regional Development
Pre-requisite(s)	None
Co-requisite	None
Credits	L:2 T:0 P:0 SL: 0
Class schedule per week	02
Class	M. Plan
Semester / Level	II
Branch	Architecture and Planning
Name of Teacher	Dr. Prashant Prasad

Course Objectives

This course aims to provide students with:

Sl No.	Objectives
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 (COs)

Upon successful completion of the course, students will be able to

CO	Course Outcomes
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

<i>Module No.</i>	<i>Module name</i>	<i>Detailed Contents</i>	<i>No. of Lecture</i>
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.	6 Lectures
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.	6 Lectures
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.	8 Lectures
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.	4 Lectures
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	6 Lectures

		spatial restructuring; National and international case studies of corridor-based regional development.	
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<i>Learning Resources</i>	
<i>Text Books</i>	<i>Reference Books</i>
T1 Kadiyali, L. R. (2014). Traffic Engineering and Transport Planning. Khanna Publishers, New Delhi.	R1 Ministry of Housing and Urban Affairs (2017). National Transit Oriented Development Policy. Government of India.
T2 Vuchic, V. R. (2005). Urban Transit: Operations, Planning & Economics. John Wiley & Sons.	R2 Prabir De and Kavita Iyengar (2014). Developing Economic Corridors in South Asia. Asian Development Bank, Manila.
T3 O'Flaherty Coleman A. (1997). Transport Planning and Traffic Engineering. CRC Press, Taylor and Francis Group.	R3 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.
T4 Mitchell, R. B. & Rapkin, C. (1954). Urban Traffic: A Function of Land Use. Columbia University Press.	R4 Pokhrel Ramesh, Bertolini Luca and Brommelstroet te Marco (2023). How does transportation facilitate regional economic development? A heuristic Mapping of the literature. Elsevier, Amsterdam.
T5 Rodrigue, J.-P., Comtois, C., & Slack, B. (2006). The Geography of Transport Systems. Routledge.	R5 Luis Enrique Ramos-Santiago (2023). Enhancing station level Direct-Demand models with Multi-Scalar accessibility indicators. Elsevier, Amsterdam.
	R6 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.
	R7 Jivan J. (2021). Regional Development and Planning. Rawat Publications, New Delhi.
	R8 Hilal Yildirik Keser (2015). Importance of Transport Corridors in Regional Development: The Case of TRACECA. Sosyoekonomi.
	R9 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/
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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 Outcome (Co) Attainment Assessment Tools and Evaluation Procedure

Direct Assessment	Assessment Tool	% Contribution during CO Assessment				
	Continuous Internal Assessment	50%				
	Semester End Examination	50%				
	Continuous Internal Assessment	% Distribution				
	Best 2 Quiz marks out of 3 Quizzes of 15 marks each.	30%				
	Assignment(s)	10%				
	Seminar before a Committee	10%				
	Assessment Components	CO1	CO2	CO3	CO4	CO5
	Continuous Internal Assessment	✓	✓	✓	✓	✓
	Semester End Examination	✓	✓	✓	✓	✓

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

Mapping Between Course Outcomes and Program Outcomes						
CO	PO1	PO2	PO3	PO4	PO5	PO6

CO1	3	2	2	1	2	1
CO2	2	3	2	2	2	1
CO3	3	3	2	2	1	1
CO4	2	3	2	2	2	1
CO5	3	2	3	1	3	2

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 (SL) such as use of NPTEL materials and internets
CD7	Simulation

Mapping Between Course Outcomes and Course Delivery Method

Course Outcomes	Course Delivery Method
CO1	CD1, CD2
CO2	CD1, CD2, CD5, CD6
CO3	CD1, CD2, CD6
CO4	CD1, CD2, CD6
CO5	CD1, CD2, CD6

Course Designers

<i>Experts from Industry</i>	<i>Experts from Higher Technical Institutions</i>	<i>Internal Experts</i>
		✓

COURSE INFORMATION

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

Course Objectives <i>This course aims to provide students with:</i>	
SI No.	Objectives
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.

Course Outcomes (COs) <i>Upon successful completion of the course, students will be able to</i>	
CO	Course Outcomes
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

<i>Module No.</i>	<i>Module name</i>	<i>Detailed Contents</i>	<i>No. of Lecture</i>
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.	7 Lectures
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.	7 Lectures
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.	7 Lectures
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.	7 Lectures

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.	7 Lectures
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Learning Resources	
Text Books	Reference Books
T1 Communication Skills (2015) 2 nd edition, Sanjay Kumar & Pushp Lata, Oxford University Press T2 Business Correspondence and Report Writing (2017), R.C.Sharma, Krishna Mohan. McGraw Hill	R1 Basic Business Communication-(2004). Lesikar I Flatley, McGraw Hill R2 Business Communication Today, (2017), Bovee, Thill and Chatterjee, Pearson R3 Krishnan, M, & Jha, S.(2024). <i>Focus: A course in Communication Skills</i> . Cambridge University Press R4 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 Outcome (Co) Attainment Assessment Tools and Evaluation Procedure

Direct Assessment	Assessment Tool	% Contribution during CO Assessment
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	Continuous Internal Assessment		60				
	End Semester exams		40				
	Continuous Internal Assessment		% Distribution				
	Day-to-day performance & assignments		30				
	Quiz 1		10				
	Viva- Voce		20				
	Assessment Components		CO1	CO2	CO3	CO4	CO5
	Continuous Internal Assessment		✓	✓	✓	✓	✓
	Semester End Examination		✓	✓	✓	✓	✓

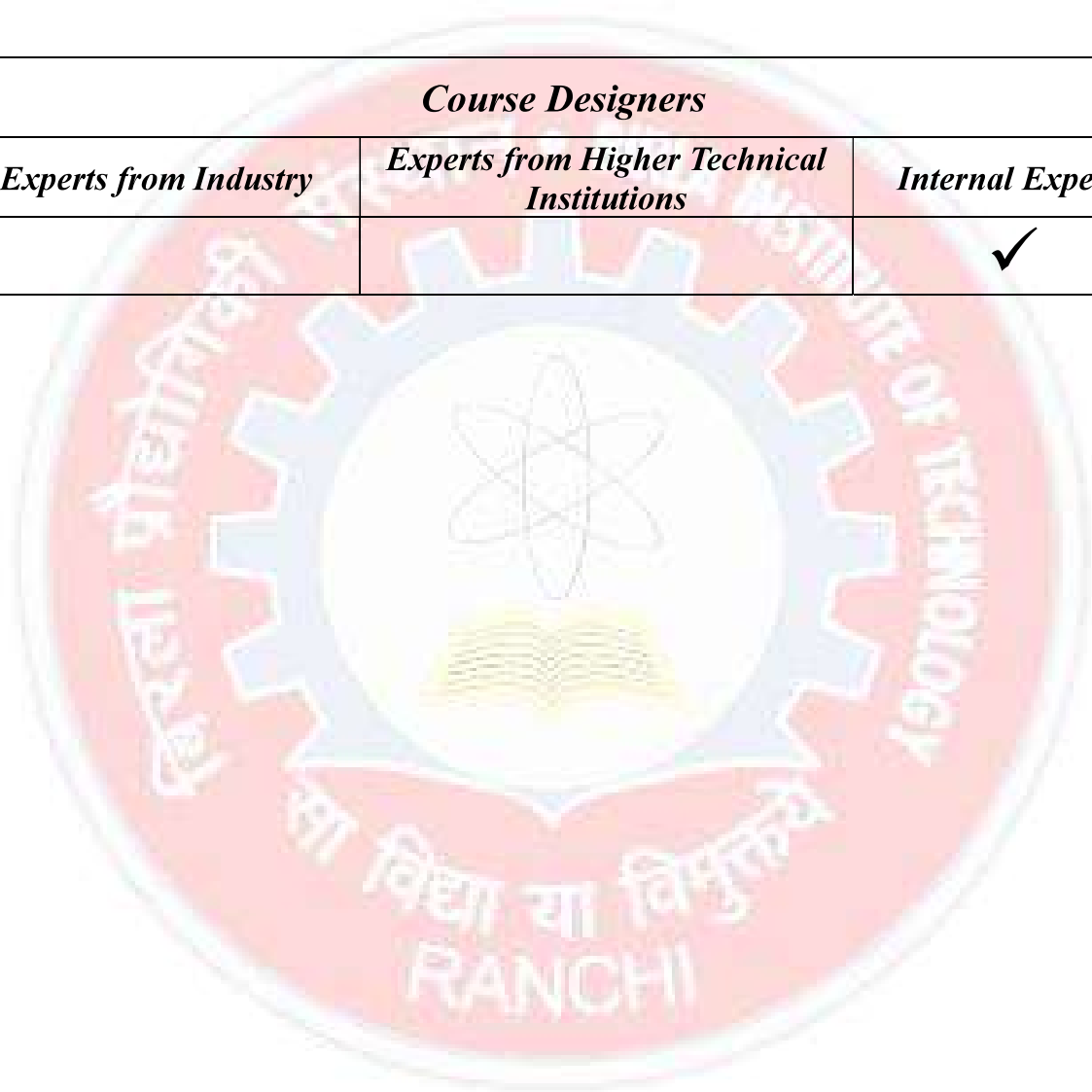
Indirect Assessment	1. Student Feedback on Faculty					
	2. Student Feedback on Course Outcome					

Mapping Between Course Outcomes and Program Outcomes						
CO	PO1	PO2	PO3	PO4	PO5	PO6
CO 1						
CO 2						
CO 3						
CO 4						
CO 5						

Course Delivery Methods	
CD1	Audio-based listening tasks Guided note-taking sessions Reflective listening exercises
CD2	Dialogues and role-plays Peer interaction & group speaking Instructor-guided oral presentations
CD3	Close reading sessions Vocabulary contextualization Discussion and written interpretation
CD4	Writing workshops Draft-review-revise activities Individual assignments (email, report, summary)
CD5	Group project and presentations Integrated tasks (listen-read-write) Reflective journal writing

<i>Mapping Between Course Outcomes and Course Delivery Method</i>	
Course Outcomes	Course Delivery Method
CO1	CD1, CD6
CO2	CD1, CD2, CD6
CO3	CD1, CD2, CD6

<i>Course Designers</i>		
<i>Experts from Industry</i>	<i>Experts from Higher Technical Institutions</i>	<i>Internal Experts</i>
		✓



COURSE INFORMATION

Course code	ARP 26661
Course title	Planning Studio - Development Planning
Pre-requisite(s)	None
Co-requisite	None
Credits	L: 0 T: 0 P: 12 SL:0
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 <i>This course aims to provide students with:</i>	
Sl No.	Objectives
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 case studies.
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 (COs) <i>Upon successful completion of the course, students will be able to</i>	
CO	Course Outcomes
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

<i>Module No.</i>	<i>Module name</i>	<i>Detailed Contents</i>	<i>No. of Lecture</i>
Module	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.	78 Lectures

Learning Resources

<i>Text Books</i>	<i>Reference Books</i>
T1 - Kevin Lynch, Good City Form, MIT Press T2 - Design of Cities, Penguin Publishers	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

<i>Gaps in the Syllabus (to meet Industry/Profession requirements)</i>	Nil
<i>Pos met through Gaps in the Syllabus</i>	Nil
<i>Topics beyond syllabus/Advanced topics/Design</i>	Nil
<i>Pos met through Topics beyond syllabus/Advanced topics/Design</i>	Nil

Course Outcome (Co) Attainment Assessment Tools and Evaluation Procedure

<i>Direct Assessment</i>	<i>Assessment Tool</i>	<i>% Contribution during CO Assessment</i>				
	Continuous Internal Assessment	50%				
	Semester End Examination	50%				
	<i>Continuous Internal Assessment</i>	<i>% Distribution</i>				
	Best 2 Quiz marks out of 3 Quizzes of 15 marks each.	30%				
	Assignment(s)	10%				
	Seminar before a Committee	10%				
	<i>Assessment Components</i>	<i>CO1</i>	<i>CO2</i>	<i>CO3</i>	<i>CO4</i>	
	Continuous Internal Assessment	✓	✓	✓	✓	
	Semester End Examination	✓	✓	✓	✓	

<i>Indirect Assessment</i>	1. Student Feedback on Faculty
	2. Student Feedback on Course Outcome

<i>Mapping Between Course Outcomes and Program Outcomes</i>						
CO	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

<i>Course Delivery Methods</i>	
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 (SL) such as use of NPTEL materials and internets
CD7	Simulation

<i>Mapping Between Course Outcomes and Course Delivery Method</i>	
Course Outcomes	Course Delivery Method
CO1	CD2, CD4
CO2	CD2, CD3
CO3	CD2, CD3
CO4	CD2, CD3, CD7

<i>Course Designers</i>		
<i>Experts from Industry</i>	<i>Experts from Higher Technical Institutions</i>	<i>Internal Experts</i>
		✓



Sem III

COURSE INFORMATION

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

Course Objectives <i>This course aims to provide students with:</i>	
Sl No.	Objectives
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, SVAMITVA 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 (COs) <i>Upon successful completion of the course, students will be able to</i>	
CO	Course Outcomes
CO1	Appreciate the various hierarchies of District planning, budgeting and various government programmes and projects.
CO2	Appreciate the spatial rural development and their programmes and model spatial developments

Syllabus

<i>Module No.</i>	<i>Module name</i>	<i>Detailed Contents</i>	<i>No. of Lecture</i>
Module 1	Introduction to District Planning	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.	8 Lectures
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.	10 Lectures
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.	8 Lectures
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.	10 Lectures
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.	6 Lectures

<i>Learning Resources</i>	
<i>Text Books</i>	<i>Reference Books</i>
T1. Singh K. and A. Shisodia (2016). Rural Development Principles, Policies, 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. Inamdar 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.	R1 - RADPFI guidelines. R2- MoPR Reports and Guidelines

<i>Gaps in the Syllabus (to meet Industry/Profession requirements)</i>	Nil
<i>Pos met through Gaps in the Syllabus</i>	Nil
<i>Topics beyond syllabus/Advanced topics/Design</i>	Nil
<i>Pos met through Topics beyond syllabus/Advanced topics/Design</i>	Nil

Course Outcome (Co) Attainment Assessment Tools and Evaluation Procedure

Direct Assessment	Assessment Tool	% Contribution during CO Assessment					
	Continuous Internal Assessment	50%					
	Semester End Examination	50%					
	Continuous Internal Assessment		% Distribution				
	Best 2 Quiz marks out of 3 Quizzes of 15 marks each.		30%				
	Assignment(s)		10%				
	Seminar before a Committee		10%				
	Assessment Components		CO1	CO2	CO3	CO4	CO5
	Continuous Internal Assessment		✓	✓	✓	✓	✓
Semester End Examination		✓	✓	✓	✓	✓	

<i>Indirect Assessment</i>	1. Student Feedback on Faculty
	2. Student Feedback on Course Outcome

<i>Mapping Between Course Outcomes and Program Outcomes</i>						
<i>CO</i>	<i>PO1</i>	<i>PO2</i>	<i>PO3</i>	<i>PO4</i>	<i>PO5</i>	<i>PO6</i>
<i>CO1</i>	1	2	3	1	2	1
<i>CO2</i>	2	3	2	2	3	2

<i>Course Delivery Methods</i>	
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 (SL) such as use of NPTEL materials and internets
CD7	Simulation

<i>Course Designers</i>		
<i>Experts from Industry</i>	<i>Experts from Higher Technical Institutions</i>	<i>Internal Experts</i>
		✓

<i>Mapping Between Course Outcomes and Course Delivery Method</i>	
Course Outcomes	Course Delivery Method
CO1	CD1, CD2, CD3
CO2	CD1, CD2, CD3

COURSE INFORMATION

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

Course Objectives <i>This course aims to provide students with:</i>	
Sl No.	Objectives
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 (COs) <i>Upon successful completion of the course, students will be able to</i>	
CO	Course Outcomes
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 No.	Module name	Detailed Contents	No. of Lecture
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	10 Lectures
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)	8 Lectures
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	8 Lectures
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	8 Lectures
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 titling, GIS Based property valuation (Unit based	6 Lectures

		pricing, zone based, etc.); Peri-urban areas (SVAMITVA) transparency in land transaction, methods of publicising land price monitoring.	
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<i>Learning Resources</i>	
<i>Text Books</i>	<i>Reference Books</i>
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.	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

<i>Gaps in the Syllabus (to meet Industry/Profession requirements)</i>	Nil
<i>Pos met through Gaps in the Syllabus</i>	Nil
<i>Topics beyond syllabus/Advanced topics/Design</i>	Nil
<i>Pos met through Topics beyond syllabus/Advanced topics/Design</i>	Nil

Course Outcome (Co) Attainment Assessment Tools and Evaluation Procedure

	<i>Assessment Tool</i>	<i>% Contribution during CO Assessment</i>
<i>Direct Assessment</i>	Continuous Internal Assessment	50%
	Semester End Examination	50%

	<i>Continuous Internal Assessment</i>	<i>% Distribution</i>			
	Best 2 Quiz marks out of 3 Quizzes of 15 marks each.	30%			
	Assignment(s)	10%			
	Seminar before a Committee	10%			
	<i>Assessment Components</i>	<i>CO1</i>	<i>CO2</i>	<i>CO3</i>	<i>CO4</i>
	Continuous Internal Assessment	✓	✓	✓	✓
	Semester End Examination	✓	✓	✓	✓

<i>Indirect Assessment</i>	1. Student Feedback on Faculty
	2. Student Feedback on Course Outcome

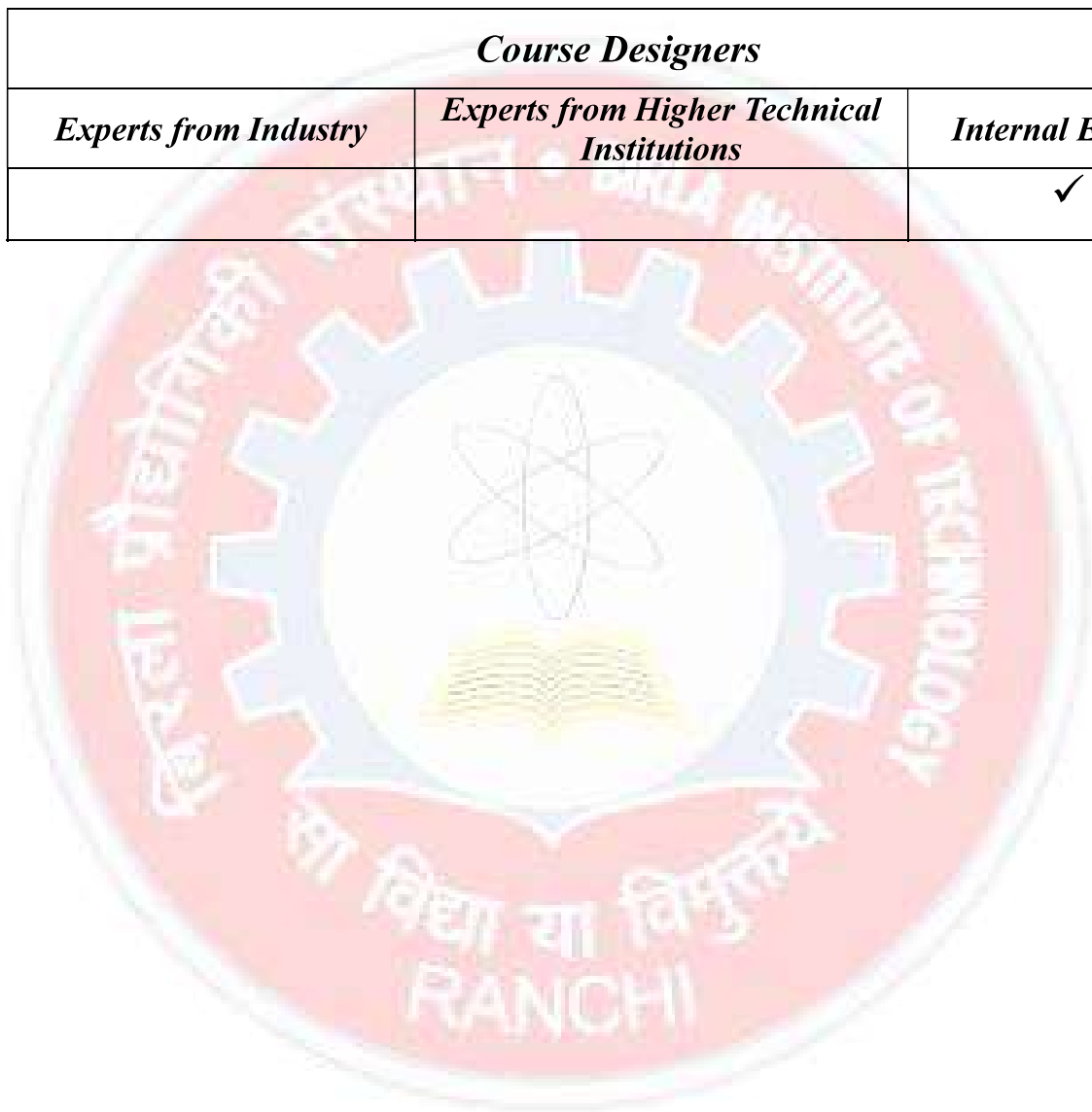
<i>Mapping Between Course Outcomes and Program Outcomes</i>						
CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	2	1	1	2	1	2
CO2	2	2	2	2	2	2
CO3	2	1	1	1	2	2
CO4	3	2	3	2	2	3

<i>Course Delivery Methods</i>	
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 (SL) such as use of NPTEL materials and internets
CD7	Simulation

<i>Mapping Between Course Outcomes and Course Delivery Method</i>	
Course Outcomes	Course Delivery Method
CO1	CD1, CD2,CD3
EstateCO2	Estate

CO3	Estate
CO4	Estate

<i>Course Designers</i>		
<i>Experts from Industry</i>	<i>Experts from Higher Technical Institutions</i>	<i>Internal Experts</i>
		✓



COURSE INFORMATION

Course code	ARP 26721
Course title	Planning Studio- Regional Planning
Pre-requisite(s)	None
Co-requisite	None
Credits	L: 0 T: 0 P: 12 SL:0
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 <i>This course aims to provide students with:</i>	
Sl No.	Objectives
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 (COs) <i>Upon successful completion of the course, students will be able to</i>	
CO	Course Outcomes
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

<i>Module No.</i>	<i>Module name</i>	<i>Detailed Contents</i>	<i>No. of Lecture</i>
Module	Regional Planning	Preparation of Regional Development Plan for District(s): integrate/converge sectors, settlements, and finances; resource flows, plan land use implementation as per the 74th CAA and 73rd CAA, URDFPI, RADFPI guidelines, Source of funding for the plan with Integrating District Development and Village Development Plan spatially with phasing, project identification for steering future development, phasing and Evaluation Plan.	78 Lectures

Learning Resources

<i>Text Books</i>	<i>Reference Books</i>
T1- Hall, P., & Tewdwr-Jones, M. (2019). <i>Urban and regional planning</i> (6th ed.). Routledge. T2- LeGates, R. T., & Stout, F. (2015). <i>City and regional planning</i>. Routledge. T3- Jain, A. K. (2012). <i>Urban and regional planning: A practical guide</i>. Khanna Publishers. T4- McLoughlin, J. B. (1969). <i>Urban and regional planning: A systems approach</i>. Faber and Faber. T5- Friedmann, J., & Alonso, W. (1964). <i>Regional development and planning: A reader</i>. MIT Press. T6- McHarg, I. L. (1969). <i>Design with nature</i>. Natural History Press. T7- Jacobs, J. (1961). <i>The death and life of great American cities</i>. Random House. T8- Gehl, J. (2010). <i>Cities for people</i>. Island Press.	R1- Perroux, F. (1988). <i>Growth poles and regional development</i>. In <i>Regional economic development studies</i>. Routledge. R2- Glasston, J., & Marshall, T. (2007). <i>Regional planning</i>. Routledge. R3- Richardson, H. W. (1979). <i>Regional economics</i>. University of Illinois Press. R4- Blair, J. P., & Carroll, M. C. (2009). <i>Local economic development: Analysis and practice</i> (2nd ed.). Sage Publications. R5- Isard, W. (1960). <i>Methods of regional analysis: An introduction to regional science</i>. MIT Press.

<i>Gaps in the Syllabus (to meet Industry/Profession requirements)</i>	Nil
<i>Pos met through Gaps in the Syllabus</i>	Nil
<i>Topics beyond syllabus/Advanced topics/Design</i>	Nil
<i>Pos met through Topics beyond syllabus/Advanced topics/Design</i>	Nil

Course Outcome (Co) Attainment Assessment Tools and Evaluation Procedure

<i>Direct Assessment</i>	<i>Assessment Tool</i>	<i>% Contribution during CO Assessment</i>				
	Continuous Internal Assessment	50%				
	Semester End Examination	50%				
	<i>Continuous Internal Assessment</i>	<i>% Distribution</i>				
	Best 2 Quiz marks out of 3 Quizzes of 15 marks each.	30%				
	Assignment(s)	10%				
	Seminar before a Committee	10%				
	<i>Assessment Components</i>	<i>CO1</i>	<i>CO2</i>			
	Continuous Internal Assessment	✓	✓			
	Semester End Examination	✓	✓			

<i>Indirect Assessment</i>	1. Student Feedback on Faculty
	2. Student Feedback on Course Outcome

<i>Mapping Between Course Outcomes and Program Outcomes</i>						
CO	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	3	2	3	3	2
CO 2	3	3	3	2	3	2

<i>Course Delivery Methods</i>	
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 (SL) such as use of NPTEL materials and internets
CD7	Simulation

<i>Mapping Between Course Outcomes and Course Delivery Method</i>	
Course Outcomes	Course Delivery Method
CO1	CD1, CD2, CD3, CD4, CD5, CD7
CO2	CD1, CD2, CD3, CD4, CD5, CD7

<i>Course Designers</i>		
<i>Experts from Industry</i>	<i>Experts from Higher Technical Institutions</i>	<i>Internal Experts</i>
		✓

COURSE INFORMATION

Course code	ARP 26722
Course title	Planning Studio – Thesis Preliminaries
Pre-requisite(s)	Should have cleared all courses till Semester II
Co-requisite	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 aims to provide students with:

Sl No.	Objectives
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 (COs)

Upon successful completion of the course, students will be able to

CO	Course Outcomes
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

<i>Module No.</i>	<i>Module name</i>	<i>Detailed Contents</i>	<i>No. of Lecture</i>
1	Thesis Preliminaries	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	40 Lectures

<i>Learning Resources</i>	
<i>Text Books</i>	<i>Reference Books</i>
NA	NA

<i>Gaps in the Syllabus (to meet Industry/Profession requirements)</i>	Nil
<i>Pos met through Gaps in the Syllabus</i>	Nil
<i>Topics beyond syllabus/Advanced topics/Design</i>	Nil
<i>Pos met through Topics beyond syllabus/Advanced topics/Design</i>	Nil

Course Outcome (Co) Attainment Assessment Tools and Evaluation Procedure

Assessment Tool	% Contribution during CO Assessment
Lab Quiz-1	10
Lab Quiz-2	10
Lab Viva	20
Day-to-Day Progressive Evaluation	30
End-Sem Performance	30

Direct Assessment	Assessment Tool	% Contribution during CO Assessment			
	Day-to-Day Progressive Evaluation	20			
	End-Sem Performance	30			
	Continuous Internal Assessment	% Distribution			
	Lab Quiz-1	10			
	Lab Quiz-2	10			
	Lab Viva	20			
	Assessment Components	CO1	CO2	CO3	CO4
	Continuous Internal Assessment	√	√	√	√
	Semester End Examination	√	√	√	√

Indirect Assessment	

Mapping Between Course Outcomes and Program Outcomes						
CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	1	3	1	3	1	1
CO2	2	2	3	3	1	2
CO3	3	2	3	1	2	1
CO4	1	3	1	1	3	3

Mapping Between Course Outcomes and Course Delivery Method

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 (SL) such as use of NPTEL materials and internets
CD7	Simulation

Course Outcomes	Course Delivery Method
CO1	CD1, CD2, CD3
CO2	CD2, CD3, CD4
CO3	CD3, CD5, CD7
CO4	CD4, CD5, CD6, CD7

<i>Course Designers</i>		
<i>Experts from Industry</i>	<i>Experts from Higher Technical Institutions</i>	<i>Internal Experts</i>
		✓



COURSE INFORMATION

Course code	ARP 26723
Course title	Internship
Pre-requisite(s)	None
Co-requisite	None
Credits	L:3 T:0 P:0
Class schedule per week	
Class	M. Plan
Semester / Level	I
Branch	Architecture and Planning
Name of Teacher	Dr Rizwan Kazmi

Course Objectives <i>This course aims to provide students with:</i>	
SI No.	Objectives
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 (COs) <i>Upon successful completion of the course, students will be able to</i>	
CO	Course Outcomes
CO1.	Understand the nature and scope of professional work in the relevant industry/discipline.
CO2.	Contribute effectively to different work profiles in accordance with industry requirements.
CO3.	Present and communicate professional work and experiences effectively.

Syllabus

<i>Module No.</i>	<i>Module name</i>	<i>Detailed Contents</i>	<i>No. of Lecture</i>
1	Internship	Eight weeks of intensive internship after Semester II in a Planning/Urban Design organisation.	NA
		Submission of a comprehensive internship report detailing work undertaken, learning outcomes and schedule.	
		Presentation of the internship work and Viva-voce based on the learning.	

<i>Learning Resources</i>	
<i>Text Books</i>	<i>Reference Books</i>
NA	NA

<i>Gaps in the Syllabus (to meet Industry/Profession requirements)</i>	Nil
<i>Pos met through Gaps in the Syllabus</i>	Nil
<i>Topics beyond syllabus/Advanced topics/Design</i>	Nil
<i>Pos met through Topics beyond syllabus/Advanced topics/Design</i>	Nil

Course Outcome (Co) Attainment Assessment Tools and Evaluation Procedure

<i>Direct Assessment</i>	<i>Assessment Tool</i>	<i>% Contribution during CO Assessment</i>
	Continuous Internal Assessment	
	Semester End Examination	100%
	<i>Continuous Internal Assessment</i>	<i>% Distribution</i>
	Best 2 Quiz marks out of 3 Quizzes of 15 marks each.	

	Assignment(s)					
	Seminar before a Committee					
	Assessment Components	CO1	CO2	CO3		
	Continuous Internal Assessment					
	Semester End Examination	ü	ü	ü		

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

Mapping Between Course Outcomes and Program Outcomes						
CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	2	2	3	2	2
CO2	3	3	3	1	2	1
CO3	1	3	3	2	3	3

Course Delivery Methods	
CD1	Mini Projects
CD2	Seminars
CD3	
CD4	
CD5	Industrial training
CD6	
CD7	

Mapping Between Course Outcomes and Course Delivery Method	
Course Outcomes	Course Delivery Method
CO1	CD1, CD2, CD5
CO2	CD1, CD2, CD5
CO3	CD1, CD2, CD5

<i>Course Designers</i>		
<i>Experts from Industry</i>	<i>Experts from Higher Technical Institutions</i>	<i>Internal Experts</i>
		✓





Sem IV

COURSE INFORMATION

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

Course Objectives <i>This course aims to provide students with:</i>	
Sl No.	Objectives
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 (COs) <i>Upon successful completion of the course, students will be able to</i>	
CO	Course Outcomes
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.	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 develop an understanding about how to accurately quote fees and charges for professional services provided in spatial planning at urban and regional scale

Syllabus

<i>Module No.</i>	<i>Module name</i>	<i>Detailed Contents</i>	<i>No. of Lecture</i>
Module 1	Concept of Planning Legislation	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.	5 Lectures
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	10 Lectures
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,	10 Lectures

		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	10 Lectures
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.	5 Lectures

<i>Learning Resources</i>	
<i>Text Books</i>	<i>Reference Books</i>
T1. Aijaz R. (2012). Democracy and Urban Governance in India. Academic Foundation T2. Osborne S.P. (2010). The new public governance: emerging perspectives on the theory and practice of public governance. Routledge, London T3. Pattanaik B. K. (2025) Urban Development and Planning: An Introduction. Routledge, India. T4. Kulshrestha S. K. (2012), Urban and Regional Planning in India: A Handbook for Professional Practice. Saga Publications, New Delhi. T5. Rydin Y., Robert Beauregard, Marco Cremaschi and Laura Lieto (2022). Regulation and Planning: Practices, Institutions, Agency. Routledge, London	R1. Jain, A. K. (2010). Urban Planning and Governance a New Paradigm. Bookwell Publications R2. Institute of Town Planners, India. (2003). Memorandum Articles of Association and Byelaws. New Delhi. R3. Kapucu Naim (2020). Network Governance: Concepts, Theories, and Applications. Routledge, London. R4. 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. R5. Le Galès, P. (2001). Urban governance and

T6. Shah Uttam Chand (2023). Planning Legislation covering Urban & Regional Planning and Environmental Laws in India. Notion Press, Chennai. T7. Singh Sukhpal, Jyotsna Jha, A. Indira and A.V. Arunkumar. (2024). Institutions and Public Policy for India's Sustainable Development. Routledge, London.	policy networks: on the boundedness of policy networks. A French case. Springer, Berlin. RR6. 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. R8. Ministry of Panchayati Raj (2024). Government of India, New Delhi. R9. Rhodes R.A.W. (1997). Understanding Governance. Open University Press, Buckingham. R10. Rogers D.L. and D.A. Whetten (1982). Inter-organizational Coordination: Theory, Research, and Implementation. Iowa State University Press, Ames. R11. Teisman G.R., A. van Buuren and L. Gerrits (2008). Managing complex governance networks. Routledge, London.
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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 Outcome (Co) Attainment Assessment Tools and Evaluation Procedure

<i>Direct Assessment</i>	<i>Assessment Tool</i>	<i>% Contribution during CO Assessment</i>
	Continuous Internal Assessment	50%
	Semester End Examination	50%
	<i>Continuous Internal Assessment</i>	
	<i>% Distribution</i>	
	Best 2 Quiz marks out of 3 Quizzes of 15 marks each.	30%

	Assignment(s)	10%					
	Seminar before a Committee	10%					
	Assessment Components	CO 1	CO 2	CO 3	CO 4	CO 5	CO 6
	Continuous Internal Assessment	✓	✓	✓	✓	✓	✓
	Semester End Examination	✓	✓	✓	✓	✓	✓

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

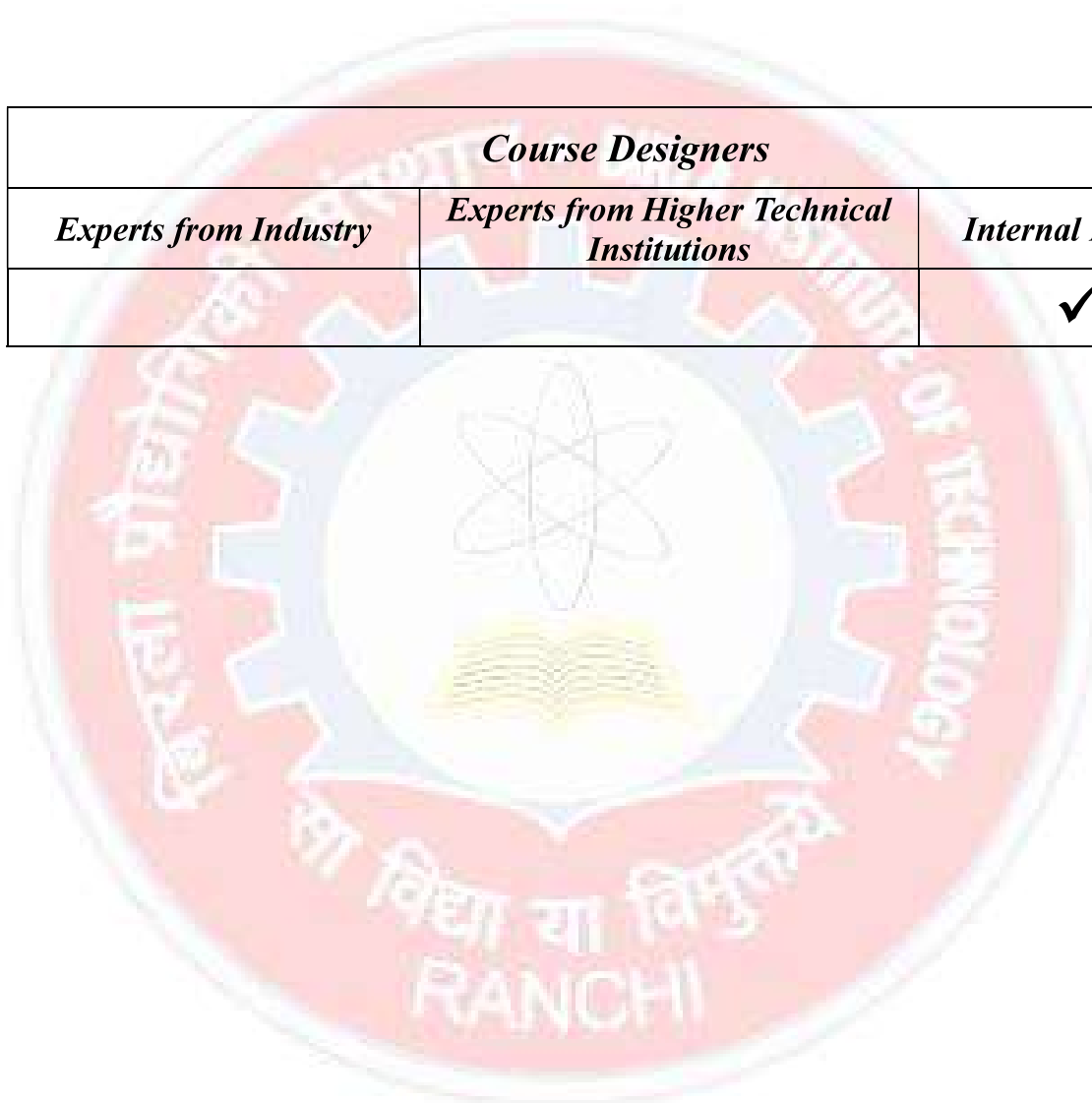
Mapping Between Course Outcomes and Program Outcomes						
CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	2	2	3
CO2	3	2	1	1	3	3
CO3	3	3	3	2	2	3
CO4	3	3	2	2	3	3
CO5	3	3	3	3	3	3
CO6	1	1	1	1	1	2

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 (SL) such as use of NPTEL materials and internets
CD7	Simulation

Mapping Between Course Outcomes and Course Delivery Method	
Course Outcomes	Course Delivery Method
CO1	CD1, CD6

CO2	CD1, CD2, CD6
CO3	CD1, CD2, CD6
CO4	CD1, CD2, CD4
CO5	CD1, CD2, CD4
CO6	CD1, CD4, CD6

<i>Course Designers</i>		
<i>Experts from Industry</i>	<i>Experts from Higher Technical Institutions</i>	<i>Internal Experts</i>
		✓



COURSE INFORMATION

Course code	ARP 26752
Course title	Project Planning, Management and Development Finance
Pre-requisite(s)	None
Co-requisite	None
Credits	L: 3 T: 0 P: 0 SL: 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 <i>This course aims to provide students with:</i>	
Sl No.	Objectives
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 (COs) <i>Upon successful completion of the course, students will be able to</i>	
CO	Course Outcomes
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

<i>Module No.</i>	<i>Module name</i>	<i>Detailed Contents</i>	<i>No. of Lecture</i>
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.	6 Lectures
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.	8 Lectures
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.	6 Lectures
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.	8 Lectures
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	8 Lectures

<i>Learning Resources</i>	
<i>Text Books</i>	<i>Reference Books</i>
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.	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.

<i>Gaps in the Syllabus (to meet Industry/Profession requirements)</i>	Nil
<i>Pos met through Gaps in the Syllabus</i>	Nil
<i>Topics beyond syllabus/Advanced topics/Design</i>	Nil
<i>Pos met through Topics beyond syllabus/Advanced topics/Design</i>	Nil

Course Outcome (Co) Attainment Assessment Tools and Evaluation Procedure

<i>Direct Assessment</i>	<i>Assessment Tool</i>	<i>% Contribution during CO Assessment</i>
	Continuous Internal Assessment	50%
	Semester End Examination	50%
	<i>Continuous Internal Assessment</i>	<i>% Distribution</i>
	Best 2 Quiz marks out of 3 Quizzes of 15 marks each.	30%
	Assignment(s)	10%

	Seminar before a Committee	10%					
	<i>Assessment Components</i>	<i>CO 1</i>	<i>CO 2</i>	<i>CO 3</i>	<i>CO 4</i>	<i>CO 5</i>	<i>CO 6</i>
	Continuous Internal Assessment	✓	✓	✓	✓	✓	✓
	Semester End Examination	✓	✓	✓	✓	✓	✓

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

Mapping Between Course Outcomes and Program Outcomes						
CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	2	2	3
CO2	3	2	1	1	3	3
CO3	3	3	3	2	2	3
CO4	3	3	2	2	3	3

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 (SL) such as use of NPTEL materials and internets
CD7	Simulation

Mapping Between Course Outcomes and Course Delivery Method	
Course Outcomes	Course Delivery Method
CO1	CD1, CD6
CO2	CD1, CD2, CD6
CO3	CD1, CD2, CD6
CO4	CD1, CD2, CD4

<i>Course Designers</i>		
<i>Experts from Industry</i>	<i>Experts from Higher Technical Institutions</i>	<i>Internal Experts</i>
		✓



COURSE INFORMATION

Course code	ARP 26722
Course title	Planning Studio-Thesis
Pre-requisite(s)	Cleared all courses till Sem II & registered for Thesis Preliminaries in Sem III
Co-requisite	None
Credits 02	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 aims to provide students with:

Sl No.	Objectives
A	To expose the students to guided research on topic initiated in 3 rd 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 3 rd semester
D	To propose appropriate strategies / policies / guidelines for development of their research areas.

Course Outcomes (COs)

Upon successful completion of the course, students will be able to

CO	Course Outcomes
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

<i>Module No.</i>	<i>Module name</i>	<i>Detailed Contents</i>	<i>No. of Lecture</i>
1	Planning Studio-Thesis	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.	40 Lectures

<i>Learning Resources</i>	
<i>Text Books</i>	<i>Reference Books</i>
NA	NA

<i>Gaps in the Syllabus (to meet Industry/Profession requirements)</i>	Nil
<i>Pos met through Gaps in the Syllabus</i>	Nil
<i>Topics beyond syllabus/Advanced topics/Design</i>	Nil
<i>Pos met through Topics beyond syllabus/Advanced topics/Design</i>	Nil

Course Outcome (Co) Attainment Assessment Tools and Evaluation Procedure

Assessment Tool	% Contribution during CO Assessment
Lab Quiz-1	10
Lab Quiz-2	10
Lab Viva	20
Day-to-Day Progressive Evaluation	30
End-Sem Performance	30

<i>Direct Assessment</i>	<i>Assessment Tool</i>	<i>% Contribution during CO Assessment</i>
	Day-to-Day Progressive Evaluation	20
	End-Sem Performance	30
	<i>Continuous Internal Assessment</i>	
	<i>% Distribution</i>	
	Lab Quiz-1	10
	Lab Quiz-2	10

	Lab Viva	20			
	Assessment Components	CO1	CO2	CO3	CO4
	Continuous Internal Assessment	√	√	√	√
	Semester End Examination	√	√	√	√

Indirect Assessment	

Mapping Between Course Outcomes and Program Outcomes						
CO	PO1	PO2	PO3	PO4	PO5	PO6
CO1	1	3	3	3	1	1
CO2	3	2	1	1	1	2
CO3	3	3	3	3	3	3
CO4	3	3	3	3	3	3

Course Delivery Methods	
CD1	Lecture by use of boards/LCD projectors/OHP projectors
CD2	Assignments/Seminars
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CD5	Industrial visits/in-plant training
CD6	Self- learning (SL) such as use of NPTEL materials and internets
CD7	Simulation

Mapping Between Course Outcomes and Course Delivery Method	
Course Outcomes	Course Delivery Method
CO1	CD1, CD2, CD3
CO2	CD2, CD3, CD4
CO3	CD3, CD5, CD7
CO4	CD4, CD5, CD6, CD7

Course Designers		
Experts from Industry	Experts from Higher Technical Institutions	Internal Experts
		✓