

MASTER OF URBAN & REGIONAL PLANNING (M.U.R.P.) 2 YEARS FULL TIME PROGRAM

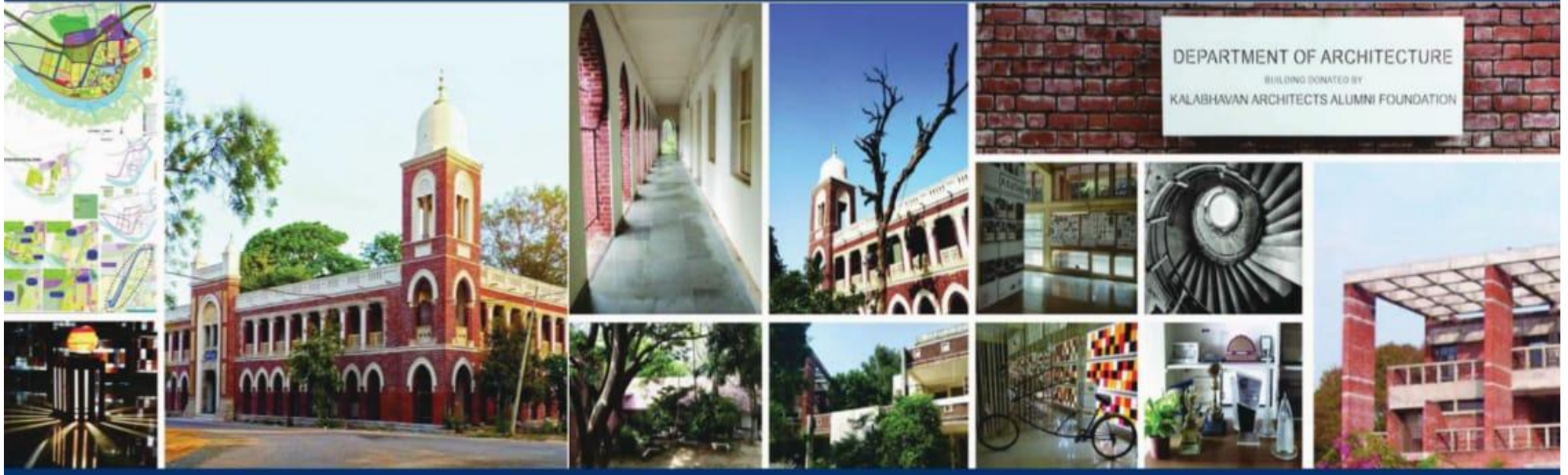
DEPARTMENT OF ARCHITECTURE
FACULTY OF TECHNOLOGY AND ENGINEERING



सत्यं शिवं सुन्दरम्

Estd. 1949

Accredited Grade "A+" by NAAC



**MASTER OF URBAN AND REGIONAL PLANNING
COURSE BOOKLET
AY 2025-2026**

Curriculum Details:

MURP I

F.S. OF MURP I													
Semester Number:				01			Maximum Marks for Present Semester:					1000	
Maximum Courses / Papers for the Present Semester:				06			Minimum Marks for Present Semester:					0	
Minimum Courses / Papers for the Present Semester:				06			Total Credits for the Present Semester:					-	
Sr. No.	Subject Code	Subject Name	Subject Group	Teaching and Learning			Examination						
				Contact Hours	Hours of Teaching per Week	Teaching Learning Method (TLM)	Assessment Method (AM)	Assessment Type (AT)	UA Marks	UA Duration	IA Marks	Total Marks	Minimum Marks for Passing
1	ARC2132C06	Economics and Sociology for Planners	CORE	3	2	LECTURE	THEORY	UA + IA	35	2	15	100	50
					1	STUDIO	TW	UA	35	-	-		
							RV & VIVA	UA	15	-	-		
2	ARC2133C07	Ecology and Planning	CORE	3	2	LECTURE	THEORY	UA + IA	35	2	15	100	50
					1	STUDIO	TW	UA	35	-	-		
							RV & VIVA	UA	15	-	-		
3	ARC2134C08	Landuse and Infrastructure	CORE	3	2	LECTURE	THEORY	UA + IA	35	2	15	100	50
					1	STUDIO	TW	UA	35	-	-		
							RV & VIVA	UA	15	-	-		
4	ARC2135C09	Planning Techniques	CORE	3	2	LECTURE	THEORY	UA + IA	35	2	15	100	50
					1	STUDIO	TW	UA	35	-	-		
							RV & VIVA	UA	15	-	-		
5	ARC2136C10	Settlement and Planning Theory	CORE	3	2	LECTURE	THEORY	UA + IA	35	2	15	100	50
					1	STUDIO	TW	UA	35	-	-		
							RV & VIVA	UA	15	-	-		
6	ARC2131S01	Planning Studio I	CORE	15	3	LECTURE	TW	UA + IA	300	-	50	500	250
					12	STUDIO	RV & VIVA	UA	150	-	-		
TOTAL:				30								1000	500

S.S. OF MURP I									
Semester Number:			02		Maximum Marks for Present Semester:			1000	
Maximum Courses / Papers for the Present Semester:			07		Minimum Marks for Present Semester:			0	
Minimum Courses / Papers for the Present Semester:			07		Total Credits for the Present Semester:			-	
				Teaching and Learning			Examination		

Sr. No.	Subject Code	Subject Name	Subject Group	Contact Hours	Hours of Teaching per Week	Teaching Learning Method (TLM)	Assessment Method (AM)	Assessment Type (AT)	UA Marks	UA Duration	IA Marks	Total Marks	Minimum Marks for Passing
1	ARC2243C10	Governance, Law & Professional Practice	CORE	3	2	LECTURE	THEORY	UA + IA	35	2	15	100	50
					1	STUDIO	TW	UA	35	-	-		
							RV & VIVA	UA	15	-	-		
2	ARC2244C11	Land Economics and Management	CORE	3	2	LECTURE	THEORY	UA + IA	35	2	15	100	50
					1	STUDIO	TW	UA	35	-	-		
							RV & VIVA	UA	15	-	-		
3	ARC2245C12	GIS: Theory and Application	CORE	3	2	LECTURE	THEORY	UA + IA	35	2	15	100	50
					1	STUDIO	TW	UA	35	-	-		
							RV & VIVA	UA	15	-	-		
4	ARC2246C13	Urban and Rural Development in India	CORE	3	2	LECTURE	THEORY	UA + IA	35	2	15	100	50
					1	STUDIO	TW	UA	35	-	-		
							RV & VIVA	UA	15	-	-		
5	ARC2247E05	Politics and Planning	ELECTIVE	3	2	LECTURE	THEORY	UA + IA	35	2	15	100	50
					1	STUDIO	TW	UA	35	-	-		
							RV & VIVA	UA	15	-	-		
	ARC2248E06	Public Participation		3	2	LECTURE	THEORY	UA + IA	35	2	15		
					1	STUDIO	TW	UA	35	-	-		
							RV & VIVA	UA	15	-	-		
	ARC2249E07	Planning for Tourism		3	2	LECTURE	THEORY	UA + IA	35	2	15		
					1	STUDIO	TW	UA	35	-	-		
							RV & VIVA	UA	15	-	-		
	ARC2250E08	Regional Hydrology and Water Mgmt.		3	2	LECTURE	THEORY	UA + IA	35	2	15		
					1	STUDIO	TW	UA	35	-	-		
							RV & VIVA	UA	15	-	-		
6	ARC2242S02	Planning Studio II	CORE	15	3	LECTURE	TW	UA + IA	300	-	50	500	250
					12	STUDIO	RV & VIVA	UA	150	-	-		
7	ARC2241P02	Practical Training*	CORE	-	40	PRACTICAL	VIVA	UA	100	-	-	100	50
TOTAL:				30								1000	500

*PRACTICAL TRAINING Evaluation System: Indirect Grading System (marks for this subject will not be added to the total marks for the semester)

- ≥ 50 Marks: SATISFACTORY GRADE (S)
- < 50 Marks: NON-SATISFACTORY GRADE (NS)

MURP II

F.S. OF MURP II													
Semester Number:				03			Maximum Marks for Present Semester:					1000	
Maximum Courses / Papers for the Present Semester:				06			Minimum Marks for Present Semester:					0	
Minimum Courses / Papers for the Present Semester:				06			Total Credits for the Present Semester:					-	
Sr. No.	Subject Code	Subject Name	Subject Group	Teaching and Learning			Examination						
				Contact Hours	Hours of Teaching per Week	Teaching Learning Method (TLM)	Assessment Method (AM)	Assessment Type (AT)	UA Marks	UA Duration	IA Marks	Total Marks	Minimum Marks for Passing
1	ARC2309C10	Heritage and Conservation	CORE	3	2	LECTURE	THEORY	UA	50	2	-	100	50
					1	STUDIO	TW	IA	-	-	50		
2	ARC2310C11	Project Management	CORE	3	2	LECTURE	THEORY	UA	50	2	-	100	50
					1	STUDIO	TW	IA	-	-	50		
3	ARC2311C12	Public Urban Finance	CORE	3	2	LECTURE	THEORY	UA	50	2	-	100	50
					1	STUDIO	TW	IA	-	-	50		
4	ARC2312C13	Research & Thesis Prep.	CORE	3	2	LECTURE	THEORY	UA	50	2	-	100	50
					1	STUDIO	TW	IA	-	-	50		
5	ARC2314E07	Transportation Planning	ELECTIVE	3	2	LECTURE	THEORY	UA	50	2	-	100	50
					1	STUDIO	TW	IA	-	-	50		
	ARC2315E08	Planning and Disaster Mgmt.		3	2	LECTURE	THEORY	UA	50	2	-		
					1	STUDIO	TW	IA	-	-	50		
	ARC2319E11	Urban Hydrology and Water Mgmt.		3	2	LECTURE	THEORY	UA	50	2	-		
					1	STUDIO	TW	IA	-	-	50		
6	ARC2318S03	Planning Studio III	CORE	15	3	LECTURE	TW	UA	250	-	-	500	250
					12	STUDIO	RV & VIVA	IA	-	-	250		
TOTAL:				30								1000	500

S.S. OF MURP I										
Semester Number:				04		Maximum Marks for Present Semester:				1000
Maximum Courses / Papers for the Present Semester:				01		Minimum Marks for Present Semester:				0
Minimum Courses / Papers for the Present Semester:				01		Total Credits for the Present Semester:				-
				Teaching and Learning			Examination			

Sr. No.	Subject Code	Subject Name	Subject Group	Contact Hours	Hours of Teaching per Week	Teaching Learning Method (TLM)	Assessment Method (AM)	Assessment Type (AT)	UA Marks	UA Duration	IA Marks	Total Marks	Minimum Marks for Passing
1	ARC2204C14	Planning Thesis	CORE	30	30	STUDIO	TW	UA	500	-	-	1000	500
							RV & VIVA	IA	-	-	500		
TOTAL:				30								1000	500

Syllabus Details:

Programme Specific Outcome (PSO)

PSO1	Urban and Regional Planning Knowledge: Apply the knowledge of Planning theory, Socio–Economic aspects, Technology, Governance, Environment, Conservation Stream of Subjects to urban and regional plan.
PSO2	Conduct Field Investigations and arrive at Inferences: Use research-based knowledge and research methods such as simple surveys, direct observations and documentation to interpret data and apply them to urban and regional planning.
PSO3	Modern Tool Usage: Use appropriate IT tools to draw and communicate city and regional planning concepts.
PSO4	The Planner and Society: Respond to needs of Society such as health, safety, cultural issues etc. and create socially responsible planning and designs.
PSO5	Environment and Sustainability: Understand and address issues of environment in planning at urban and regional level.

MURP Semester – I

ARC2136C10

SETTLEMENT AND PLANNING THEORY

LECTURES: 2 HOURS

STUDIO: 1 HOUR

EXAM PAPER: 50 MARKS (35UA + 15IA)

TERM WORK: 50 MARKS

TOTAL: 100 MARKS

INTRODUCTION: The city, in all its complexity, is a true reflection of man's dwelling on earth. In its physical form, it not only embodies cultural (social, economic, religious, political) and physical (climatic and geographical) forces but also tells the story of its evolution. From a planning point of view, a comprehensive understanding of cities is necessary and possible through a study of their history various theories, concepts and approaches that have shaped it, as well as the process of Planning.

		The Maharaja Sayajirao University of Baroda Faculty of Architecture and Planning Department of Planning	Academic Year	2025-26
Master of Urban and Regional Planning (M.U.R.P.): Regular Programme				
Year	I	Core Settlement and Planning Theory (ARC2136C10)	Credits / Hours per week	3
Semester	I	Year of Introduction: 2017 Year of Syllabus Revision:	Maximum Marks / Grade	100
Mode of Transaction		Studio & Lectures		
Course Outcome (CO) CO1 Understand the dynamics of human settlements, both past and present, through various theories and approaches. CO2 Understand the settlements as an expression of culture, influenced by climate and geographical location. CO3 Address to various theories, concepts, models and approaches of planning that have influenced/directed/guided the planning process. CO4 Ability to understand the planning process, and development of various types of plans, especially in India.				

Unit No.	Topic/Unit	Contact Hours	Weightage (%)	BT Level	CO	PSO	Elements of Employability (Emp)/ Entrepreneurship (Ent)/ Skill Development (SD)	Relevance to Local (L)/ National (N)/ Regional(R)/Global (G) developmental needs	Relation to Gender (G), Environment and Sustainability (ES), Human Values (HV)and Professional Ethics (PE)
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1	UNIT 1: History of Settlements City as a cultural construct, ancient to modern- an expression of religion and rituals, social and economic structure, city as a political statement, concept of the "Ideal city" with examples from India and the other parts of the world.	5	10%	1 & 2	CO1	PSO1, PSO4	Emp, Ent	L,N,R,G	ES,HV, PE
2	UNIT 2: Evolution of settlements origin, influence, livelihood, culture, growth/decline; physical structure – form, organization, space, scale; elements of the city.	3	5%	1 & 2	CO1	PSO1, PSO4			
3	UNIT 3: Planning Process Definition and objectives of planning, concepts and approaches, governing factors – vision, strategy, goal, objectives, scope and limitation in the Indian context. Types of plans and planning processes – Structure plans, Action plans, strategic plans; Autocratic planning, Democratic planning, Technocratic planning, Liberal planning, Socialist planning.	8	25%	1,2 & 4	CO3 CO4	PSO1, PSO3,			
4	UNIT 4: Planning Theory Planning and development theories – concentric zone theory, sector theory, multiple nuclei theory, land use and land value theory, other latest theories from around the world. Growth Pole theory, Christaller's Central Place theory, Weber's Theory of Locations, Core-periphery theory, Land Use and Land Value Theory of William Alonso, Spread and Back wash theory – relevance of these in the Indian context.	9	25%	1,2,3 & 4	CO3	PSO1, PSO4			
5	UNIT 5: Various concepts Garden city concept, green belt concept, Neighborhood concept, Generatic and Parasitic city.	6	10%	1,2 & 3	CO1, CO2	PSO1, PSO5			
6	UNIT 6: Various models and approaches Advocacy and Pluralism in planning, Action planning, Mixed planning, Systems approach to planning, Rationalistic and Incremental approach, Mixed Scanning and Middle Range planning, Equity planning.	8	10%	1,2 & 3	CO4	PSO1, PSO3			
7	UNIT 7: Contribution of individuals to city planning and understanding of the city Lewis Mumford, Patrick Geddes, Peter Hall, Kevin Lynch, Edward Bacon, Camillo Sitte, Le Corbusier, Frank Lloyd Wright	6	15%	1,2 & 3	CO2, CO3	PSO1, PSO4			

Reference Books

1. Morris. A.E.J., 1979, *History of Urban Form Before the Industrial Revolution*, George Godwin Limited, London.
2. Mumford, L., *The City in History*

3.	Gallion. A., Eisner. S., 1998 (fifth edition), <i>The Urban Pattern-City Planning and Design</i> , CBS Publishers and Distributors, New Delhi, in arrangement with Van Nostrand Reinhold Company, USA.
4.	Le Gates. R. T., Stout. F., (ed), <i>The City Reader</i> , 2011 (fifth edition), Routledge, London.

TERM WORK AND EXAMINATION

There will be either one assignment of 35 marks with two components to cover the settlement aspects and planning theory aspects of the subject or two assignments to cover both aspects individually. Remaining 15 marks from the Term Work Component will be based on Review and Viva which will be scheduled at semester end based on the Term Work carried out for 35 marks.

Term-work will in the form of:

Seminar with selected readings and presentations to be made individually or in groups or as a Paper and Report.

UA Examination of 35 marks will be of two hours duration in which the focus will be to examine the overall comprehension of the subject and assimilation of knowledge. Questions will be framed to judge the student's ability to express personal views substantiated with cross referencing.

IA Examination of 15 marks will be conducted halfway through the semester.

Bloom's Taxonomy Levels:

1. Remember

2. Understand

3. Application

4. Analysis

5. Evaluation

6. Creation

ARC2135C09 PLANNING TECHNIQUES

LECTURES: 2 HOURS
STUDIO: 1 HOUR

EXAM PAPER: 50 MARKS (35UA + 15IA)
TERM WORK: 50 MARKS
TOTAL: 100 MARKS

INTRODUCTION: Identification, collection and analysis of precise data are imperatives for any successful planning proposal. There are wide-ranging tools and techniques available for the process of data collection, analysis and presentation. A thorough understanding of these tools and techniques will enable the students to prepare a comprehensive planning proposal.

		The Maharaja Sayajirao University of Baroda Faculty of Architecture and Planning Department of Planning	Academic Year	2025-26
Master of Urban and Regional Planning (M.U.R.P.): Regular Programme				
Year	I	Core Planning Techniques (ARC2135C09)	Credits / Hours per week	3
Semester	I	Year of Introduction: 2017 Year of Syllabus Revision:	Maximum Marks / Grade	100
Mode of Transaction		Studio & Lectures		
Course Outcome (CO)				
CO1 Ability to Identify and collected various primary and secondary data through learning various techniques of data collection. CO2 Ability to understand planning standards at various levels and its application. CO3 Ability to conduct data synthesis and analysis. CO4 Ability to develop a proper document/proposal in the form of presentable reports with drawings/mapping. With specific reference to planning.				

Unit No.	Topic/Unit	Contact Hours	Weightage (%)	BT Level	CO	PSO	Elements of Employability (Emp)/ Entrepreneurship (Ent)/ Skill Development (SD)	Relevance to Local (L)/ National (N)/ Regional(R)/Global (G) developmental needs	Relation to Gender (G), Environment and Sustainability (ES), Human Values (HV) and Professional Ethics (PE)
1	UNIT 1 Survey Techniques and Mapping Identifying data requirements - database for physical surveys including land use, density,	15	30%	,1,2 ,3 & 6	CO1	POS1, PSO2, POS5		L,N,R,G	ES, HV,

	building age etc. and socio-economic surveys; Questionnaire formulation, Sampling and Survey techniques; Land use classification or coding and expected outputs; Techniques of preparing base maps including understanding the concepts of scales, components and detailing for various levels of plans.						Emp, SD		PE
2	UNIT 2 Analytical Methods Classification of regions and delineation techniques of various types of regions. Threshold analysis, Input Output analysis, SWOT analysis, linear programming etc. Methods of population projections; Lorenz Curve, Ginni Ratio etc. Demographic analysis - Measures of Population change, Population structure, composition, spatial distribution – Urban-rural, urban concentration, metropolitan concentration, location dimensions of population groups.	15	25%	1,2,3 & 4	CO1	PSO1 PSO2 PSO3,			
3	UNIT 3 Planning Standards Spatial standards, performance standards and benchmarks and variable standards; UDPFI guidelines, zoning regulations and development control regulations.	5	25%	1,2,3,4,5& 6	CO2	PSO1 PSO2, PSO4			
4	UNIT 4 Presentation and Report Writing Data tabulation and synthesis, Interpretation of information, graphical presentation of data, spatial representation of data, Types of reports with specific focus on technical report writing; Organizing and structuring the report, chapter organization, writing the report with analytical findings, referencing in text and overall referencing in report.	10	20%	1,2,3,4,5& 6	CO4	PSO1 PSO3			

Reference Books

1. Roberts Margaret, 1974, An Introduction to Town Planning Techniques, Hutchinson & Co Ltd, London.
2. Planning Techniques, Reader volume, ITPI, New Delhi.
3. Kruckerberg and Silvers, 1974, Urban Planning Analysis: Methods and Models, John Wiley & Sons, New York.
4. UDPFI Guidelines, 1996, Ministry of Urban Development, Government of India, New Delhi.
5. James Suther, 1959, Technical Report Writing, John Wiley & Sons, New York.
6. Kothari CR, 1986, Research methodology, Methods and Techniques, Wiley Eastern, New Delhi.
7. URDPFI Guideline, Volume II A and II B, Appendices to URDPFI Guidelines, 2014 (January 2015)

TERM WORK AND EXAMINATION

There will be either one assignment of 35 marks or two separate assignments for 35 marks. Remaining 15 marks from the Term Work Component will be based on Review and Viva which will be scheduled at semester end based on the Term Work carried out for 35 marks.

These will in the form of:

Seminar with selected readings and presentations to be made individually or in groups or a ~~Per~~ Brand Report.

UA Examination of 35 marks will be of two hours duration in which the focus will be to examine the overall comprehension of the subject and assimilation of knowledge. Questions will be framed to judge the student's ability to express personal views substantiated with cross referencing.

IA Examination of 15 marks will be conducted halfway through the semester.

Bloom's Taxonomy Levels:

1. Remember

2. Understand

3. Application

4. Analysis

5. Evaluation

6. Creation

ARC2134C08**LAND USE AND INFRASTRUCTURE****LECTURES: 2 HOURS**
STUDIO: 1 HOUR**EXAM PAPER: 50 MARKS (35UA + 15IA)**
TERM WORK: 50 MARKS
TOTAL: 100 MARKS

INTRODUCTION: All settlements, urban and rural, are made up of various layers and components that are inter related and interdependent. With rapid urbanization, this relationship has been skewed and planning of all these components has become fragmented. For budding planners, it is imperative that they balance the various threads and layers of the built and un-built environment.

		The Maharaja Sayajirao University of Baroda Faculty of Architecture and Planning Department of Planning		Academic Year	2025-26
Master of Urban and Regional Planning (M.U.R.P.): Regular Programme					
Year	I	Core Land use and Infrastructure (ARC2126C08)	Credits / Hours per week		3
Semester	I	Year of Introduction: 2017 Year of Syllabus Revision:	Maximum Marks / Grade		100
Mode of Transaction		Studio & Lectures			
Course Outcome (CO) CO1 To understand the various components of infrastructure and services CO2 To enable students to inter relate various typologies of land uses to related infrastructure and services.					

Unit No.	Topic/Unit	Contact Hours	Weightage (%)	BT Level	CO	PSO	Elements of Employability (Emp)/ Entrepreneurship (Ent)/ Skill Development (SD)	Relevance to Local (L)/ National (N)/ Regional(R)/Global (G) developmental needs	Relation to Gender (G), Environment and Sustainability (ES), Human Values (HV) and Professional Ethics (PE)
1	UNIT 1: Land Use elements and components, implications and inter-relationship of various land uses on infrastructure, implications of land use planning on spatial quality of neighborhood/ city – defining how people live work and play, understanding density implications, zoning and	12	26%	1, 2 & 4	CO1	PSO1 PSO2			

	influence of zoning on shaping the city, land use decision making process, development plans and implementation strategies (TP Schemes, etc.), Land use Models- Lowry and Garin.						Emp, Ent, SD	L, R, N, G	G, ES, HV, PE
2	UNIT 2: Role of transport, types of transport systems, evolution of transport modes, transport problems and mobility issues; Urban form and Transport patterns, land use – transport cycle, concept of accessibility; Hierarchy, capacity and geometric design elements of roads and intersections; Basic principles of Transport infrastructure design; Traffic and transportation surveys and studies, traffic, data base, concept of trip generation Transport, environment and safety issues; principles and approaches of traffic management, transport system management.	12	26%	3, 4, 5 & 6	CO1 CO2	PSO1 PSO2 PSO4			
3	UNIT 3: History of Infrastructure History of Water Supply- Components of Public water supply system, Selection & analysis of methods of water supply & layouts, Design guidelines for quality & treatment issues, project financing overall water supply management, legal rights, pricing issues. History of Sewerage system- Conveyance of storm water & sewerage system, components of separate & combined system, sewage treatment- Alternative technological options, sewage disposal and Reuse & Recycling methods. Refuse components and Characteristics, Refuse Collection system, refuse treatment- technological options, Refuse disposal methods-Segregation, Reuse and Recycling options, Legislative requirements	12	26%	3, 4, 5 & 6	CO1 CO2	PSO1 PSO2 PSO5			
4	Unit 4: Power – Sources of power procurement, distribution networks, demand assessment, norms and standards, planning provisions and management issues. Concepts and theories for design and operation of electricity networks, power generation (conventional and non-conventional) Fire – History of fire hazards, vulnerable locations, methods of firefighting, norms and standards, planning provisions and management issues. Communication networks like telephone facilities, WLL, cable TV, Fiber optic and other broadband communications networks, etc.	09	22%	3, 4, 5 & 6	CO1 CO2	POS2 PSO3 PSO5			

Reference Books	
1.	Abbasi, S.A.; Ramaswamy, E.V., 2001, Solid Waste Management with Earthworms, New Delhi, Discovery Publication
2.	Babbitt H.E., 1956, Sewerage and Sewage Treatment 7th Edition, New York John Wiley & Sons, Inc. Chapman & Hall Ltd., London.
3.	Bijlani, H.U.; Rao, P.S.N., 1990, Water Supply and Sanitation in India., New Delhi, Oxford and IBH Publishing
4.	Bandela, N.N; Tare, D.G., 2009, Municipal solid waste management, B.R. Publishing
5.	Bureau of Indian Standards, Code of Basic Requirement for Water Supply, Drainage and Sanitation, IS 1172, 1993, New Delhi, 1990.
6.	Bureau of Indian Standards, Provision and maintenance of Water Supplies for Firefighting Code of Practice IS:9668:1990, New Delhi, BIS, 1990
7.	David Butter, 2004, Urban Drainage David Butter & John W. Davis Spon Press (IInd Edition) London & New York.
8.	Gathe Donald E.; Billings, R. Bruce.; Buras, Nathan, 2003, Managing Urban Water Supply, Dordrecht, Kulwer Academic Press
9.	George Godwin, 1981, Traffic Transportation and Urban Planning. London, George Godwin
10.	L.R. Kadiyali, Traffic Engineering and Transport Planning

TERM WORK AND EXAMINATION
35 marks of the Term Work component will be distributed over smaller assignments as deemed fit by the subject teachers. Remaining 15 marks from the Term Work Component will be based on Review and Viva which will be scheduled at semester end based on the Term Work carried out for 35 marks. These will in the form of: Seminar with selected readings and presentations to be made individually or in groups. Paper and Report. UA Examination of 35 marks will be of two hours duration in which the focus will be to examine the overall comprehension of the subject and assimilation of knowledge. Questions will be framed to judge the student's ability to express personal views substantiated with cross referencing. IA Examination of 15 marks will be conducted halfway through the semester.

Bloom's Taxonomy Levels: 1. Remember 2. Understand 3. Application 4. Analysis 5. Evaluation 6. Creation

ARC2133C07 ECOLOGY AND PLANNING

LECTURES: 2 HOURS
STUDIO: 1 HOUR

EXAM PAPER: 50 MARKS (35UA + 15IA)
TERM WORK: 50 MARKS
TOTAL: 100 MARKS

INTRODUCTION: As a foundation for making planning decisions, an understanding of the concepts, principles, and applications of environment and ecological sciences is essential. This subject, in three interrelated units, will cover (i) the foundation topics; (ii) methods of applying, integrating and implementing ecological values and principles-based planning decisions, and (iii) emerging and complementary topics. This subject is designed to help enhance the knowledge and skill base essential for ecological planning and meet the following objectives.

 सत्यं शिवं सुन्दरम्		The Maharaja Sayajirao University of Baroda Faculty Technology and Engineering Department of Architecture		Academic Year	2025-26
Master of Urban and Regional Planning (M.U.R.P.): Regular Programme					
Year	I	Core Ecology and Planning (ARC2133C07)	Credits / Hours per week		3
Semester	I	Year of Introduction: 2017 Year of Syllabus Revision:	Maximum Marks / Grade		100
Mode of Transaction		Studio & Lectures			
Course Outcome (CO)					
CO1 Make a familiar with important principles and concepts of environment and ecological sciences and their inter-relation with planning.					
CO2 Understand the ecological theories and apply in planning and implementation for decision making- policy and physical planning.					
CO3 To appreciate the values and advocate the need for ecological sciences in planning at various scales and in various settings.					

Unit No.	Topic/Unit	Contact Hours	Weightage (%)	BT Level	CO	PSO	Elements of Employability (Emp)/ Entrepreneurship (Ent)/ Skill Development (SD)	Relevance to Local (L)/ National (N)/ Regional(R)/Global (G) developmental needs	Relation to Gender (G), Environment and Sustainability (ES), Human Values (HV) and Professional Ethics (PE)
1	UNIT 1: Foundation Topics Environment and Ecology and Society – Conceptual clarity; E and E relationship with planning; Organism to ecosphere, the nested hierarchies and the natural system; Ecosystem services; Landscape and Regional								

	Ecology concepts (structure, function, change); Agro-ecosystems; Urban-Industrial Techno-ecosystems Concepts and principles of ecological sciences: Entropy, Food Chain and Web, Bio-geo-chemical Cycles, Cybernetics, Adaptation; Succession, Habitat and Niche, Resilience and Resistance; Dynamic Equilibrium; and the Precautionary Principle Resources Types and Values; Resources Issues – Destruction, Degradation, and Management	14	30%	1,2&3	CO1	PSO1 PSO5	Emp & SD	L, N, R &G	ES,HV & PE
2	UNIT 2: Methods and Applications Ecological (Holistic) Planning Process; Suitability Analysis and Synthesis; Human Dimensions; and the Landscape Approach Environmental Standard and Environmental Impact Statements and Assessments Strategies, Best Practices, Tools, and/or Examples for Application and Development Management	17	40%	1,2,&4	CO2 CO3	PSO2 PSO3			
3	UNIT 3: Emerging and Complementary Topics Introduction to Conservation Biology, Restoration Ecology, Climate Change, Ecological Footprint, Carbon credits and CDMs and Emerging Technologies; and Protected Areas Introduction to Biophilia/phobia/neglect, Experience of Nature, Human / Social Ecology, Participatory Planning, Conflict Management, National and International Organizations and Legislations; Ethics of Ecology; Ecology of Hope – Personal to Planetary.	14	30%	1&2	CO1	PSO1 PSO5			

Reference Books

1.	Odum., E. P., Barrett. G. W., 2005, <i>Fundamentals of Ecology</i> , Brooks/Cole –Cengage Learning India Pvt Ltd, Delhi.
2.	Steiner F., 2008 (Second Edition), <i>Living Landscape: An Ecological Approach to Landscape Planning</i> , Island Press, Washington DC.
3.	Marsh W. M., 2010, <i>Landscape Planning: Environmental Applications</i> , Wiley, Hoboken, NJ, 2010.
4.	Dramstead W., et al., 1996, <i>Landscape Ecological Principles in Landscape Architecture and Land-Use Planning</i> , Island Press, Washington DC.
5.	Lyle J. T., 1999, <i>Design for Human Ecosystem: Landscape, Land Use, and Natural Resources</i> , Island Press, Washington DC.
6.	McHarg. I., 1999 (25th Anniversary Edition), <i>Design with Nature</i> , Wiley, Hoboken, NJ.
7.	Malaviya, P., et. al., 2012 Environmental Studies, Acme Learning Pvt Ltd, New Delhi, Singh. A., et al., 2010, <i>Environmental Science and Ethics</i> , Acme Learning Pvt Ltd, New Delhi
8.	Singh. A., et al., 2010, <i>Environmental Science and Ethics</i> , Acme Learning Pvt Ltd, New Delhi

TERM WORK AND EXAMINATION

35 marks of the Term Work component will be distributed over smaller assignments as deemed fit by the subject teachers. Remaining 15 marks from the Term Work Component will be based on Review and Viva which will be scheduled at semester end based on the Term Work carried out for 35 marks.

These will be based on readings, writing, discussions, field visits, and assignments, with international and national examples/sources, there will be two or more assignments that will make students grasp and apply principles or methods covered in this subject. These will be in the form of:

Seminar or writing assignments, on pre-approved readings or topics, done individually or in small teams and/or small project(s) on ecological planning themes done individually or in small teams.

UA Examination of 35 marks will be of two hours duration in which the focus will be to examine the overall comprehension of the subject and assimilation of knowledge. Questions will be framed to judge the student's ability to express personal views substantiated with cross referencing.

IA Examination of 15 marks will be conducted halfway through the semester.

Bloom's Taxonomy Levels:

1. Remember 2. Understand 3. Application 4. Analysis 5. Evaluation 6. Creation

ARC2132C06**ECONOMICS AND SOCIOLOGY FOR PLANNERS****LECTURES: 2 HOURS****STUDIO: 1 HOUR****EXAM PAPER: 50 MARKS (35UA + 15IA)****TERM WORK: 50 MARKS****TOTAL: 100 MARKS**

INTRODUCTION: India is a socially diverse country and exhibits multi-cultural characteristics that need to be addressed while planning for any built/un-built environment.

	The Maharaja Sayajirao University of Baroda Faculty Technology and Engineering Department of Architecture		Academic Year	2025-26
Master of Urban and Regional Planning (M.U.R.P.): Regular Programme				
Year	I	Core Economics and Sociology for Planners (ARC2132C06)	Credits / Hours per week	3
Semester	I	Year of Introduction: 2017 Year of Syllabus Revision:	Maximum Marks / Grade	100
Mode of Transaction		Studio & Lectures		
Course Outcome (CO)				
CO1 Familiarize with important principle and concept of economy				
CO2 Familiarize with important principle and concept of sociology				
CO3 Understand economic, and social - theories, concepts and polices in shaping the city, with respect to Indian society and planning perspectives.				

Unit No.	Topic/Unit	Contact Hours	Weightage (%)	BT Level	CO	PSO	Elements of Employability (Emp)/ Entrepreneurship (Ent)/ Skill Development (SD)	Relevance to Local (L)/ National (N)/ Regional(R)/Global (G) developmental needs	Relation to Gender (G), Environment and Sustainability (ES), Human Values (HV) and Professional Ethics (PE)
1	UNIT 1 Basic Economic Tools: Economic Theory, Basic Assumptions, Micro and Macro Economics Concept of Demand and Supply, Concept of Equilibrium, Equilibrium in demand analysis, Nature and types of markets, Equilibrium in the market.	11	25%	1,2	CO1	PSO1			

	Factors of Production: Land, Labor, Capital, Entrepreneurship, Theories of Rent, Transfer Earning. Characteristic features of land and labor.						Emp, SD	L,N,R,G	G,PE,HV
2	UNIT 2 Concept of Economic Growth and Planning. Demographic features of India, HDI, Poverty indices, Poverty, employment and income distribution, balanced versus unbalanced growth, Sources of Demographic Data. Features and Growth of Urbanization in India, Role of Planners in Urbanization Process. Changing economic policies and its implication on land. Theories of urban structure: Concentric Zone Theory, Sector Theory etc. Development of individual urban sites, Theories of urban growth: Economic interpretation of Central Place Theory, Urban Base Theory, Keynesian Theory, Limits to Growth Theory, Location Theory. Size, urban growth and optimality.	12	25%	1,2,3,	CO1 & CO3	PSO2 PSO4 PSO5			
3	UNIT 3 Man and Environment relationship. Traditional patterns and trends of change in Indian society, concept of social structure, culture (Culture, language, religion, caste, age, gender, health, safety, rural community and its relationship with urban community) and social institutions. Relation between social structure and spatial structure.	12	25%	1,2, 3&4	CO2	PSO1 POS5			
4	UNIT 4 Nature and scope of sociology, sociological and methods man & environment socio-cultural profile of Indian society, community and settlements, urban sociology-tradition and modernity, social problems of slums and housing, social planning and policy, poverty in India social and spatial structure safety, security and spatial planning. Basic concepts, social groups social institutions, social stratification s, orders and changes and changes and social control. Introduction to the sociological concepts of Marx, Talcot Parsons, Weber, Durkheim, Riesman, Jane Jacobs, Gans, Castells, David Harvey, etc. Research Methods and Social issues. Techniques of data collection, surveys, questionnaire, interview schedule and observations.	10	25%	1,2,	CO3	PSO1 PSO4			
Reference Books									

1.	Dholakia, R.H., Oza A.N., <i>Microeconomics for Management Students</i> , Second edition, Oxford University Press, India, 1996.
2.	Dutt and Sundharam, <i>Indian Economy</i> ; S Chand & Company Pvt. Ltd. New Delhi, 2004.
3.	Jhingan, M.L., <i>The Economics of Development and Planning</i> , Vrinda Publishers (P) Ltd., Delhi, 1997.
4.	Shankar Rao. C N, 2010. <i>Sociology of Indian Society</i> , S Chand & Company Pvt. Ltd. New Delhi, 2010.
5.	Sharma., R.K., 2010. <i>Urban Sociology</i> , Atlantic Publisher, 2010.
6.	Dube, S. C. 1990. <i>Society in India</i> . National Book Trust, New Delhi.
7.	Doshi, S.L. and Jain, P.C. 2002. <i>Rural Sociology</i> Rawat Publications, Jaipur
8.	Ahuja, Ram. 2004. <i>Indian Social System</i> Rawat Publications, Jaipur

TERM WORK AND EXAMINATION

35 marks of the Term Work component will be distributed over smaller assignments as deemed fit by the subject teachers. Remaining 15 marks from the Term Work Component will be based on Review and Viva which will be scheduled at semester end based on the Term Work carried out for 35 marks.

These will be based on readings, writing, discussions, field visits, and assignments, with international and national examples/sources, there will be two or more assignments that will make students grasp and apply principles or methods covered in this subject. These will be in the form of: Seminar or writing assignments, on pre-approved readings or topics, done individually or in small teams and/or small project(s) on ecological planning themes done individually or in small teams.

UA Examination of 35 marks will be of two hours duration in which the focus will be to examine the overall comprehension of the subject and assimilation of knowledge. Questions will be framed to judge the student's ability to express personal views substantiated with cross referencing.

IA Examination of 15 marks will be conducted halfway through the semester.

Bloom's Taxonomy Levels: 1. Remember 2. Understand 3. Application 4. Analysis 5. Evaluation 6. Creation

ARC2131S01**PLANNING STUDIO I****LECTURES: 3 HOURS****STUDIO: 12 HOUR****INTERNAL ASSESSMENT: 250 MARKS****GIS TERM WORK: 100 MARKS****EXTERNAL ASSESSMENT: 150 MARKS****TOTAL: 500 MARKS**

INTRODUCTION: The field of planning is vast and multidisciplinary. The first planning studio introduces the students to the various interdependent components and the process of planning for a given area.

CONTENTS: MODULE 1: AREA PLANNING STUDIO

Area identified to be 2-5 sq. km in area such as Industrial, TP Schemes, Neighborhoods, Inner City Area, Gamtals, Wilderness/protected areas, historic Areas, SEZ's, etc. The focus of the studio will be on planning of an area based on site analysis, application of development controls, and preparation of a site plan. For the preparation of a site plan, existing site will be examined based on a stipulated set of factors before a preliminary layout is prepared after the application of development controls.

MODULE 2: FUNDAMENTALS OF REMOTE SENSING

On completion of this course, the student shall be able to Acquire knowledge about concepts of Remote sensing, sensors and their characteristics. Gain skills in image analysis and interpretation in preparing thematic maps. Acquire knowledge in basic concepts of photogrammetry and Mapping.

OBJECTIVES:

- To introduce the student to the physical principles of Remote Sensing and photogrammetry as a tool for mapping
- To acquaint students with the data products, their properties and methods of preparing thematic information

		The Maharaja Sayajirao University of Baroda Faculty Technology and Engineering Department of Architecture	Academic Year	2025-26
Master of Urban and Regional Planning (M.U.R.P.): Regular Programme				
Year	I	Core Planning Studio I (ARC2131S01)	Credits / Hours per week	15
Semester	I	Year of Introduction: 2012 Year of Syllabus Revision:2017	Maximum Marks / Grade	500
Mode of Transaction		Studio, Lectures and Group Discussions		
Course Outcome (CO)				
CO1 Develop skill with the necessary tools to plan for a small area that would address all the components of the planning process.				
CO2 Apply planning theories and techniques in the given area of interest.				
CO3 Use of planning data products, their properties and methods of preparing thematic information				
CO4 Understanding basic concepts of data types, means of collecting data and data analysis for area planning related decision making.				

Unit No.	Topic/Unit	Contact Hours	Weightage (%)	BT Level	CO	PSO	Elements of Employability (Emp)/ Entrepreneurship (Ent)/ Skill Development (SD)	Relevance to Local (L)/ National (N)/ Regional(R)/Global (G) developmental needs	Relation to Gender (G), Environment and Sustainability (ES), Human Values (HV)and Professional Ethics (PE)
1	UNIT 1: Introduction Area identified to be 2-5 sq. km in area such as Industrial, TP Schemes, Neighborhoods, Inner City Area, Gamtals, Wilderness/ protected areas, historic Areas, SEZ's, etc.	15	15%	2,4 & 5	CO1 CO3	PSO1 PSO4			
2	UNIT 2: Understanding of fundamentals of remote sensing Introduction to remote sensing , Introduction of Remote Sensing, Development and Applications of Remote Sensing, Remote Sensing Platforms and sensors, Orbits types, Active, Passive, Optical Remote sensing, visible, infrared, thermal sensors and their characteristics, Resolution – concept and types, History and development of Indian Space Programme; Future Missions, Basic concept of remote sensing Electro Magnetic Spectrum - Effects of Atmosphere- Scattering – Absorption-Atmospheric window- Energy interaction with surface features – Spectral reflectance of earth objects and land covers, Elements of image interpretation. Advanced Remote Sensing Data acquisition – Procedure, Reflectance and Digital numbers-Intensity- Reference data, Ground truth, Characters of real and successful remote sensing system-Image Processing Types: Visual Interpretation: Introduction and need of image interpretation; image quality; Digital Processing: Digital Image Data Format; Colour Composites; Best Band FCC Display. Image rectification: geometric correction, radiometric correction, noise removal Image enhancement techniques: Contrast enhancement: Linear and Non-linear (Logarithmic contrast enhancement, Exponential contrast enhancement, Gaussian	90	35%	2,4 & 5	CO1 CO2	PSO1 PSO2 PSO4			

	Stretch, Density/Level slicing, Spatial filtering: Low frequency and High frequency, Edge enhancement, Band rationing Image Classification: Unsupervised (K-means and ISODATA) and Supervised Image analysis (Minimum Distance to Mean, Parallelepiped, Maximum Likelihood Classifiers) Microwave remote sensing Sensors, Concept of Microwave Remote Sensing, Hyper Spectral Sensing their characteristics.								
3	Introduction to Descriptive Statistics and Data Mining Central Tendency, dispersion, skewness, Kuetosis Sampling methods, Questionnaire Design, Coding Methods, Correlation and Sampling Distribution; Binomial, Poison, Normal Distribution Regression Multiple Regression, Curve fitting, Time Series and Cross-section analysis. Basics of Data Mining Concepts like types of data, data processing, and summarization –Data cleaning, Data integration & transform, Web Data Mining: Web content mining, etc. using Excel and other relevant statistical software.	30	15%	1,2,3&4	CO4	PSO3			
4	UNIT 3: Implementation For the preparation of a site plan, existing site will be examined based on a stipulated set of factors before a preliminary layout is prepared after the application of development controls.	90	35%	2,4,5 & 6	CO1 CO3	PSO2 PSO4 PSO5			

Reference Books

1.	Lynch, K., 1984 (third Edition), <i>Site Planning</i> , MIT Press Cambridge
2.	MoUD, <i>UDPI Guidelines</i> , 1996, Ministry of Urban Development, Government of India, New Delhi.
3.	Jensen, J.R., 2000, <i>Remote Sensing of the Environmental: An Earth Resource Perspective</i> , Printce Hall, Upper Saddle River, New Jersey.
4.	Lillesand, T. and R. Kiefer, 1999, <i>Remote Sensing and Image Interpretation</i> , Wiley, London.
5.	Longley, P.A., M. F. Goodchild, D.J. Maguire and D.W. Rhind, 2001, <i>Geographic Information Systems and Sciences</i> , Wiley, Chichester.
6.	Joseph, G., 2005, <i>Fundamentals of Remote Sensing</i> , Universities Press Hyderabad.
7.	Avery, T.E., and G.L. Berlin, 1985, <i>Interpretation of Aerial Photographs</i> , Burgess Minneapolis.
8.	Sunderam, K. V., 1977, <i>Urban and Regional Planning in India</i> , Concept, New Delhi.
9.	Sokhi, B. S. and SM Rashid, 1999, <i>Remote Sensing of Urban Environment</i> , Manak Publishers, New Delhi
10.	Tan, Steinbach and Kumar, <i>Introduction to Data Mining</i> , Pearson
11.	Kothari, C.R. (2014). <i>Research Methodology Methods and Techniques</i> (2nd revised edition). New Delhi, India: New Age International (p) Limited, Publishers.
12.	Kumar, R. (2011/2005/1999). <i>Research Methodology: a step-by-step guide for beginners</i> (3rd revised edition). New Delhi, India: SAGE Publications India Pvt Ltd.
13.	Babbie, E. (2001). <i>The Practice of Social Research</i> (9th ed.). Belmont, CA:Wadsworth.
14.	Patton, M. (2002). <i>Qualitative Research and Evaluation Methods</i> (3rd Ed.). London, UK: Sage Publications Ltd.

TERM WORK AND EXAMINATION

MODULE 1:

The final submission should include a concept plan, land use plan, sub-division plan, circulation plan, basic infrastructure plan, and a written report (A-4 paper) including all drawings (A-3 / A-2 / A-1 paper).

MODULE 2:

There will be assignments of 150 marks.

Bloom's Taxonomy Levels:

1. Remember 2. Understand 3. Application 4. Analysis 5. Evaluation 6. Creation

MURP Semester – II

ARC2246C13 URBAN AND RURAL DEVELOPMENT IN INDIA

LECTURES: 2 HOURS
STUDIO: 1 HOUR

EXAM PAPER: 50 MARKS (35UA + 15IA)
TERM WORK: 50 MARKS
TOTAL: 100 MARKS

INTRODUCTION: One of the major factors driving urbanization is migration from rural to urban areas. The relationship between urban and rural areas is an interdependent one. It is crucial, therefore, for planners to understand these dynamics in the light of various development policies.

 सत्यं शिवं सुन्दरम्	The Maharaja Sayajirao University of Baroda Faculty Technology and Engineering Department of Architecture		Academic Year	2025-26
Master of Urban and Regional Planning (M.U.R.P.): Regular Programme				
Year	I	Core Urban and Rural Development in India (ARC2246C13)	Credits / Hours per week	3
Semester	II	Year of Introduction: 2017 Year of Syllabus Revision:	Maximum Marks / Grade	100
Mode of Transaction		Studio & Lectures		
Course Outcome (CO) CO1 Analyze recent trends and major issues with respect to urban and rural relationship CO2 Understand and analyze the evolution of urban and rural development in India CO3 Evaluate existing policies and programme of urban & rural development CO4 Ability to analyze best practices examples and ideas				

Unit No.	Topic/Unit	Contact Hours	Weightage (%)	BT Level	CO	PSO	Elements of Employability (Emp)/ Entrepreneurship (Ent)/ Skill Development (SD)	Relevance to Local (L)/ National (N)/ Regional(R)/Global (G) developmental needs	Relation to Gender (G), Environment and Sustainability (ES), Human Values (HV) and Professional Ethics (PE)
1	UNIT 1: Trends in Urban and Rural Development Introduction, terms such as urban and rural as used in India	18	40%	1,2 & 4	CO1, CO2, CO3	PSO1 PSO2	EMP, ENT,SD	L,N,R,G	ES,HV, PE

	Population growth; Migration; Growth of urban and rural settlements- numbers, area, population; Consumption pattern changes; Changes in asset ownership, Agriculture and land utilization. Policies and Programmes: National Five-Year Plans (1950 to 2012), National Housing Policies- 1994, 1998 and 2007, Programmes such as the JNNURM, Rural Employment Schemes, Command Area Programme, PURA etc.								
2	UNIT 2: Issues in Urban and Rural Development Poverty, Migration, Pollution, Safety/Security, Livelihoods, Energy, Infrastructure, Mobility, Land Conversion, Housing, Politics.	11	25%	1,2 & 4	CO1, CO2,	PSO1 PSO3			
3	UNIT 3 National and International concepts such as Carbon Zero Cities, Smart Cities, Special Economic Zones (SEZ), Special Investment Region (SIR), Transit Oriented Development (TOD), etc.	11	25%	1,2,&3	CO4	PSO1 PSO2			
4	UNIT 4 Best Practices; Ideas and Visions for the future	5	10%	1,2& 3	CO4	PSO4			

Reference Books

1.	GoI, <i>Five Year Plans</i> , Planning Commission, GoI
2.	GoI, <i>National Housing Policy</i> , 1994; 1998; 2007, MHUPA, GoI
3.	Ramachandran, R., 1998, <i>Urbanisation and Urban Systems in India</i> , Oxford University Press, New Delhi
4.	Dash, S.K., 2007, <i>Climate Change: An Indian Perspective</i> , Cambridge University Press

TERM WORK AND EXAMINATION

35 marks of the Term Work component will be distributed over smaller assignments as deemed fit by the subject teachers. Remaining 15 marks from the Term Work Component will be based on Review and Viva which will be scheduled at semester end based on the Term Work carried out for 35 marks.

These will be based on readings, writing, discussions, field visits, and assignments, with international and national examples/sources, there will be two or more assignments that will make students grasp and apply principles or methods covered in this subject. These will be in the form of: Seminar or writing assignments, on pre-approved readings or topics, done individually or in small teams and/or small project(s) on ecological planning themes done individually or in small teams.

UA Examination of 35 marks will be of two hours duration in which the focus will be to examine the overall comprehension of the subject and assimilation of knowledge. Questions will be framed to judge the student's ability to express personal views substantiated with cross referencing.

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Bloom's Taxonomy Levels:

1. Remember 2. Understand 3. Application 4. Analysis 5. Evaluation 6. Creation

ARC2245C12 GIS THEORY AND APPLICATIONS**LECTURES: 2 HOURS**
STUDIO: 1 HOUR**EXAM PAPER: 50 MARKS (35UA + 15IA)**
TERM WORK: 50 MARKS
TOTAL: 100 MARKS

INTRODUCTION: GIS is an important tool for planners as it equips them to correlate all the components of plan making. It gives them a better understanding of the implications of the planning decisions and enables them to comprehensively associate the various aspects related to planning.

	The Maharaja Sayajirao University of Baroda Faculty Technology and Engineering Department of Architecture		Academic Year	2025-26
Master of Urban and Regional Planning (M.U.R.P.): Regular Programme				
Year	I	Core GIS: Theory and Applications (ARC2245C12)	Credits / Hours per week	3
Semester	II	Year of Introduction: 2017 Year of Syllabus Revision:	Maximum Marks / Grade	100
Mode of Transaction		Studio & Lectures		
Course Outcome (CO)				
CO1 Understand the fundamental theory of GIS and its build maps.				
CO2 Prepare a data base and model in GIS and develop various Raster and Vector Analysis capabilities.				
CO3 Analyze the spatial data with various mathematical theories.				
CO4 Prepare thematic maps and 3D models				

Unit No.	Topic/Unit	Contact Hours	Weightage (%)	BT Level	CO	PSO	Elements of Employability (Emp)/ Entrepreneurship (Ent)/ Skill Development (SD)	Relevance to Local (L)/ National (N)/ Regional(R)/Global (G) developmental needs	Relation to Gender (G), Environment and Sustainability (ES), Human Values (HV) and Professional Ethics (PE)
1	UNIT 1: Map and Cartographic Principles Map: Definition, Classification based on Function, Scale, Characteristics –Shape of Earth – Ellipsoid and Geoid Projections and Co-ordinate System - Rectangular and Geographic Coordinates – UTM and UPS –	13	30%	1, 2 & 3	CO1	PSO1 PSO3 PSO4	Emp, Ent, SD	L, R, N, G	ES, PE

2.	Kraak Menno-Jan, Omeling F, 2009 3rd Edition, Cartography: Visualization of Spatial Data, Pearson Publishers.
3.	Jensen J, Jensen R, 2012, Introductory Geographic Information Systems, International Edition, Pearson Publishers, ISBN-10: 0136147763, ISBN-13: 9780136147763
4.	Burrough, P.A. and McDonnell, R.A. 1998, Principles of Geographic Information System, Oxford University Press, Oxford.
5.	Nag, P, 1992, Thematic Cartography and remote Sensing, Concept, New Delhi.

TERM WORK AND EXAMINATION

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These will be based on readings, writing, discussions, field visits, and assignments, with international and national examples/sources, there will be two or more assignments that will make students grasp and apply principles or methods covered in this subject. These will be in the form of: Seminar or writing assignments, on pre-approved readings or topics, done individually or in small teams and/or small project(s) on ecological planning themes done individually or in small teams.

UA Examination of 35 marks will be of two hours duration in which the focus will be to examine the overall comprehension of the subject and assimilation of knowledge. Questions will be framed to judge the student's ability to express personal views substantiated with cross referencing. IA Examination of 15 marks will be conducted halfway through the semester.

Bloom's Taxonomy Levels: 1. Remember 2. Understand 3. Application 4. Analysis 5. Evaluation 6. Creation

ARC2244C11 LAND ECONOMICS AND MANAGEMENT**LECTURES: 2 HOURS**
STUDIO: 1 HOUR**EXAM PAPER: 50 MARKS (35UA + 15IA)**
TERM WORK: 50 MARKS
TOTAL: 100 MARKS

INTRODUCTION: The status of land and property ownership in India is very complex and there are various factors that affect the supply and demand for land. With urbanization, land use, infrastructure and related policies affect land economics. Planners need to be acquainted with these aspects to better understand the implications of their actions.

		The Maharaja Sayajirao University of Baroda Faculty Technology and Engineering Department of Architecture		Academic Year	2025-26
Master of Urban and Regional Planning (M.U.R.P.): Regular Programme					
Year	I	Core: Land Economics and management (ARC2244C11)	Credits / Hours per week		3
Semester	II	Year of Introduction: 2012 Year of Syllabus Revision:2017	Maximum Marks / Grade		100
Mode of Transaction		Lectures and Studio			
Course Outcome (CO)					
CO1 Understand land as an economic resource and as an important component of planning.					
CO2 Understand and analyze various economic theories and their contemporary relevance					
CO3 Analyze factors affecting cost and availability of land and its management.					

Unit No.	Topic/Unit	Contact Hours	Weightage (%)	BT Level	CO	PSO	Elements of Employability (Emp)/ Entrepreneurship (Ent)/ Skill Development (SD)	Relevance to Local (L)/ National (N)/ Regional(R)/Global (G) developmental needs	Relation to Gender (G), Environment and Sustainability (ES), Human Values (HV) and Professional Ethics (PE)
1	UNIT 1: Introduction to Land Economics	12	25%	1& 2	CO1, CO2	PSO1	Ent,SD	L,N,R	ES,PE

	Definition, nature and, scope, supply of land, characteristic features, demand for land, Factors affecting demand and supply of land economic principles of land use, urban land use pattern, accessibility of land, role of land use in spatial planning, type of land development, cost of development, and method of disposal, land co-operatives and land consolidation.								
2	UNIT 2: Right to property and property rights, Real estate markets, valuation of land and land transactions, Corruption and black marketing in real estate market, Land reforms, Environmental considerations.	11	25%	1 & 2	CO2	PSO2 PSO3			
3	UNIT 3: External factors affecting cost and availability of land: Income elasticity of demand, Theories of Business cycles, and its relationship with real estate. Impact of business cycles on demand for housing.	11	25%	1,2 &3	CO3	PSO2 PSO4			
4	UNIT 4: Housing Finance, institutional structure, factors affecting demand for housing finance, affordable housing. land price behavior in metropolitan centers in India and abroad. Residential price indices. Urban congestion, urban poor and slums, their relocation and rehabilitation, issues of migration and counter urbanization.	11	25%	1, 2, 3, 4 &5	CO1, CO3	PSO2 PSO4 PSO5			

Reference Books

1.	Balchin, P.N., Bull, G.H., Kieve., J.L., <i>Urban Land Economics and Public Policy</i> , Palgrave Macmillan Series, 5 th edition, 1995.
2.	Balchin, P.N., Isaac D., Chen J., <i>Urban Economics: A Global Perspective</i> , Palgrave Macmillan Series, 2000.

TERM WORK AND EXAMINATION

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These will be based on readings, writing, discussions, field visits, and assignments, with international and national examples/sources, there will be two or more assignments that will make students grasp and apply principles or methods covered in this subject. These will be in the form of: Seminar or writing assignments, on pre-approved readings or topics, done individually or in small teams and/or small project(s) on ecological planning themes done individually or in small teams.

UA Examination of 35 marks will be of two hours duration in which the focus will be to examine the overall comprehension of the subject and assimilation of knowledge. Questions will be framed to judge the student's ability to express personal views substantiated with cross referencing.

IA Examination of 15 marks will be conducted halfway through the semester.

Bloom's Taxonomy Levels:

1. Remember 2. Understand 3. Application 4. Analysis 5. Evaluation 6. Creation

ARC2243C10**GOVERNANCE, LAW AND PROFESSIONAL PRACTICE****LECTURES: 2 HOURS****STUDIO: 1 HOUR****EXAM PAPER: 50 MARKS (35UA + 15IA)****TERM WORK: 50 MARKS****TOTAL: 100 MARKS**

INTRODUCTION: Effective governance, efficient management and enabling legal framework are some of the basic tools to accomplish any planning proposals as envisaged. Moreover, no planning can be realized out of the range of legal system and eminent domain of law. Planning as a profession also, defines certain standards to work within. A comprehensive understanding of the interface of these different paradigms of Governance, Law and profession of planning is covered under the subject.

	The Maharaja Sayajirao University of Baroda Faculty Technology and Engineering Department of Architecture		Academic Year	2025-26
Master of Urban and Regional Planning (M.U.R.P.): Regular Programme				
Year	I	Core Governance, Law and Professional Practice (ARC2243C10)	Credits / Hours per week	3
Semester	II	Year of Introduction: 2017 Year of Syllabus Revision:	Maximum Marks / Grade	100
Mode of Transaction		Lectures and Studio		
Course Outcome (CO)				
CO1 Understand the pivotal role of Governance, its policies, structures, practices and its implications on determination of planning proposals.				
CO2 Understand scope of Management as an effective tool for effective implementation of Urban & Regional Planning policies.				
CO3 Integrate the law and understand the legal system shapes the analysis, organization and articulation of public goals and interests.				
CO4 Understand of ethics and systems in profession of planning in Indian context.				

Unit No.	Topic/Unit	Contact Hours	Weightage (%)	BT Level	CO	PSO	Elements of Employability (Emp)/ Entrepreneurship (Ent)/ Skill Development (SD)	Relevance to Local (L)/ National (N)/ Regional(R)/Global (G) developmental needs	Relation to Gender (G), Environment and Sustainability (ES), Human Values (HV) and Professional Ethics (PE)
1	UNIT 1: Urban Governance Basic concepts of governance and urban governance- Definition, Concepts, components, governments and	6	15%	1 & 2	CO1	PSO1, PSO4	Emp, Ent, SD	L,N,R,G	G,ES,HV,PE

	governance, hierarchy of structures, forms of governance, process of inclusion/exclusion. Historic evolution and development to date of Agencies involved with Urban Governance.								
2	UNIT 2: Urban Management The management – introduction, principles, theories, functions, processes. The organizing function of management and Organization – types, concepts, theories, structure and functions- approaches to understanding organizations- organizational design, development and change management. Case studies of urban and other organizations dealing with urban sector to understand governance and management systems, processes and in these organizations, and to understand governance and management aspects of reparations working in urban sector.	6	15%	1, 2, 3& 4	CO2	PSO1, PSO3, PSO4			
3	UNIT 3: Legal Systems Understanding of Law - Concept, Sources, Terminologies, Significance of law and its relationship to urban governance and urban planning, statutory backing for planning – eminent domain and police powers. Indian Constitution – concept and components. 74 th Constitutional Amendment Municipal Legislations – Evolution, structure, salient features, reforms (Model Municipal Law)	6	15%	1 & 2	CO2, CO3	PSO1, PSO4			
4	UNIT 4: Planning legislations Evolution, Overview of legal tools connected with planning and development in India – various acts related to Governance, planning and development organizations, land and other resources, Environment protection and peoples’ participation in planning process.	6	15%	1, 2 &4	CO2, CO3	PSO1, PSO4			
5	UNIT 5: Case studies Case studies of state departments, urban development authorities, urban local bodies and other organizations dealing with urban sector to understand governance, legal and management systems, processes and issues related to urban development in these organizations and to understand governance, legal and management aspects of plan preparation, plan implementation and enforcement, these various institutions/organizations working in urban sector.	10	20%	2, 4 & 5	CO2 CO3	PSO1, PSO2, PSO4			
6	UNIT 6: Professional Practice Aims and objectives of professional institute & sister bodies. Professional role and responsibility of planning	10	20%	1, 2, 3 &4, 5.	CO4	PSO1, PSO2, PSO4			

	consultants, professional ethics, code of conduct and scale of professional charges. Formulation of project proposal and outlines, consultancy agreements and contracts, managerial aspects. Role in interdisciplinary groups; appreciation of the decision-making process and the process in relation to varied consultancy assignments of planning.								
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Reference Books

1.	Mclean Mery, 1959, <i>Local Planning Administration</i> , The International City Manager.
2.	Derrick Sewell W.R., 1977, <i>Public Participation in Planning</i> , John & Sons.
3.	Pinto, Marina R., 2000, <i>Metropolitan city Governance in India</i> , Sage, New Delhi.
4.	Bhardwaj R.K., 1970, <i>Municipal administration in India</i> , Sterling Publications.
5.	Jain A.K., 2010, <i>Urban Planning and Governance</i> , Bookwell Publications.
6.	Mishra S.N., Dutta Anil, 2003, <i>Public Governance and Decentralization</i> , Mittal Publications.
7.	Sengupta Prof. B.K., <i>Planning Legislation & Professional Practice</i> , Reader volume, ITPI, New Delhi

TERM WORK AND EXAMINATION

35 marks of the Term Work component will be distributed over smaller assignments as deemed fit by the subject teachers. Remaining 15 marks from the Term Work Component will be based on Review and Viva which will be scheduled at semester end based on the Term Work carried out for 35 marks.

These will be based on readings, writing, discussions, field visits, and assignments, with international and national examples/sources, there will be two or more assignments that will make students grasp and apply principles or methods covered in this subject. These will be in the form of: Seminar or writing assignments, on pre-approved readings or topics, done individually or in small teams and/or small project(s) on ecological planning themes done individually or in small teams.

UA Examination of 35 marks will be of two hours duration in which the focus will be to examine the overall comprehension of the subject and assimilation of knowledge. Questions will be framed to judge the student's ability to express personal views substantiated with cross referencing.

IA Examination of 15 marks will be conducted halfway through the semester.

Bloom's Taxonomy Levels:

1. Remember 2. Understand 3. Application 4. Analysis 5. Evaluation 6. Creation

ARC2249E07**ELECTIVE: PLANNING FOR TOURISM****LECTURES: 2 HOURS****STUDIO: 1 HOUR****EXAM PAPER: 50 MARKS (35UA + 15IA)****TERM WORK: 50 MARKS****TOTAL: 100 MARKS**

INTRODUCTION: Scope nature and dimension of tourism. Tourism and Planning: Nature and scope of a tourism plan. Key issues and the stages of formulating tourism plan. Regionalism in tourism development planning tourism and urban regional development.

 सत्यं शिवं सुन्दरम्		The Maharaja Sayajirao University of Baroda Faculty Technology and Engineering Department of Architecture	Academic Year	2025-26
Master of Urban and Regional Planning (M.U.R.P.): Regular Programme				
Year	I	Elective Planning for Tourism (ARC2249E07)	Credits / Hours per week	3
Semester	II	Year of Introduction: 2012 Year of Syllabus Revision:2017	Maximum Marks / Grade	100
Mode of Transaction		Lectures and Studio		
Course Outcome (CO) CO1 Understand the concepts for tourism development and management; its related opportunities/threats; related policies/law and their relationship to planning CO2 Identify key elements of demand and supply in tourism planning.				

Unit No.	Topic/Unit	Contact Hours	Weightage (%)	BT Level	CO	PSO	Elements of Employability (Emp)/ Entrepreneurship (Ent)/ Skill Development (SD)	Relevance to Local (L)/ National (N)/ Regional(R)/Global (G) developmental needs	Relation to Gender (G), Environment and Sustainability (ES), Human Values (HV) and Professional Ethics (PE)
1	UNIT 1: Introduction, Theories and Tourism Management Sustainable tourism development planning 'sustainability' 'green' Eco-tourism and developing economies; wilderness tourism, other forms of tourism development. Urban government and tourism policy monitoring the tourism development.	23	50%	1, 2	CO1	PSO1, PSO4, PSO5	Emp, Ent, SD,	L,N,R	ES, HV, PE

2	UNIT 2: Tourism and Heritage: Local, state, national and international tourism, nature scope and opportunities and risk of heritage tourism: interpretation-scope and nature of heritage tourism. Business and marketing aspects of nature and heritage management.	22	50%	1, 2, 3 & 4	CO2	PSO1, PSO4, PSO5			
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Reference Books

1.	Emanuel De K., 1979, <i>Tourism-Passport to Development?</i> Oxford University Press.
2.	Bhatia, A. K., 1982, <i>Tourism Development, Principles and Practices</i> , New Delhi, Sterling Publishers
3.	Shaw, G., William. A. M., 2002, <i>Critical Issues in Tourism, Geographical Perspective</i> , Blackwell.
4.	Mark, J., 2003, <i>Tourism and Economy</i> , Versa Press.

TERM WORK AND EXAMINATION

35 marks of the Term Work component will be distributed over smaller assignments as deemed fit by the subject teachers. Remaining 15 marks from the Term Work Component will be based on Review and Viva which will be scheduled at semester end based on the Term Work carried out for 35 marks.

These will be based on readings, writing, discussions, field visits, and assignments, with international and national examples/sources, there will be two or more assignments that will make students grasp and apply principles or methods covered in this subject. These will be in the form of: Seminar or writing assignments, on pre-approved readings or topics, done individually or in small teams and/or small project(s) on ecological planning themes done individually or in small teams.

UA Examination of 35 marks will be of two hours duration in which the focus will be to examine the overall comprehension of the subject and assimilation of knowledge. Questions will be framed to judge the student's ability to express personal views substantiated with cross referencing. IA Examination of 15 marks will be conducted halfway through the semester.

Bloom's Taxonomy Levels:

1. Remember 2. Understand 3. Application 4. Analysis 5. Evaluation 6. Creation

ARC2248E06**ELECTIVE: PUBLIC PARTICIPATION****LECTURES: 2 HOURS****STUDIO: 1 HOUR****EXAM PAPER: 50 MARKS (35UA + 15IA)****TERM WORK: 50 MARKS****TOTAL: 100 MARKS**

INTRODUCTION: With increasing access to information through media, modern communication means and reforms in laws (RTI, etc.), the awareness levels are rising amongst the local citizenry. However, their participation and contribution to the decision-making planning processes still remains at cursory levels. Since, planning decisions affect the community at large, engagement and outlook of all stakeholders is important to understand their needs and requirements to make our cities more equitable and desirable places to live in.

 सत्यं शिवं सुन्दरम्	The Maharaja Sayajirao University of Baroda Faculty Technology and Engineering Department of Architecture		Academic Year	2025-26
Master of Urban and Regional Planning (M.U.R.P.): Regular Programme				
Year	I	Elective Public Participation (ARC2248E06)	Credits / Hours per week	3
Semester	II	Year of Introduction: 2017 Year of Syllabus Revision:	Maximum Marks / Grade	100
Mode of Transaction		Lectures and Studio		
Course Outcome (CO)				
CO1 Understand the role and importance of public participation				
CO2 Identify ways and means to enable effective participation				

Unit No.	Topic/Unit	Contact Hours	Weightage (%)	BT Level	CO	PSO	Elements of Employability (Emp)/ Entrepreneurship (Ent)/ Skill Development (SD)	Relevance to Local (L)/ National (N)/ Regional(R)/Global (G) developmental needs	Relation to Gender (G), Environment and Sustainability (ES), Human Values (HV) and Professional Ethics (PE)
1	UNIT 1: Theory and practice of citizen participation in planning. Examine and critique existing provision for participation for planning and policymaking. Identify ways to improvise the inclusionary participation models.	22	50%	1, 2, 3& 4	CO1	PSO1, PSO4	Emp, Ent, SD	L,N,R,G	HV, PE

2	UNIT 2: Types and methods of effective citizen participation Surveys, interviews, focus groups, charities, public meetings, etc. Identify different methods of participation to suit different purposes and at different stages in the planning process. Skills required for undertaking participatory planning. Class will design a program of public participation.	23	50%	1, 2, 3 & 4	CO2	PSO1, PSO4			
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Reference Books

1.	Arnstein, S., 1969, <i>Ladder of citizen participation</i> , American Institute of Planners,
2.	Bately, 1996., <i>Public Participation In Urban Planning</i> .
3.	Kumar, S., 2003, <i>Methods of Community participation</i> ,. New Delhi: Vistaar Publications,
4.	Sanoff, H., 2007, <i>Multiple Views of Participatory Design</i> . ArchNet-IJAR

TERM WORK AND EXAMINATION

35 marks of the Term Work component will be distributed over smaller assignments as deemed fit by the subject teachers. Remaining 15 marks from the Term Work Component will be based on Review and Viva which will be scheduled at semester end based on the Term Work carried out for 35 marks.

These will be based on readings, writing, discussions, field visits, and assignments, with international and national examples/sources, there will be two or more assignments that will make students grasp and apply principles or methods covered in this subject. These will be in the form of: Seminar or writing assignments, on pre-approved readings or topics, done individually or in small teams and/or small project(s) on ecological planning themes done individually or in small teams.

UA Examination of 35 marks will be of two hours duration in which the focus will be to examine the overall comprehension of the subject and assimilation of knowledge. Questions will be framed to judge the student's ability to express personal views substantiated with cross referencing.

IA Examination of 15 marks will be conducted halfway through the semester.

Bloom's Taxonomy Levels:

1. Remember 2. Understand 3. Application 4. Analysis 5. Evaluation 6. Creation

ARC2247E05 ELECTIVE: POLITICS AND PLANNING**LECTURES: 2 HOURS**
STUDIO: 1 HOUR**EXAM PAPER: 50 MARKS (35UA + 15IA)**
TERM WORK: 50 MARKS
TOTAL: 100 MARKS

INTRODUCTION: The area of politics and planning comprises of various institutions, actors and laws that decide the economic, physical and social development of the cities. This course aims to provide a basic introduction to the conceptual and empirical understanding of the political, legal and administrative aspects of urban governance and development in India.

	The Maharaja Sayajirao University of Baroda Faculty Technology and Engineering Department of Architecture		Academic Year	2025-26
Master of Urban and Regional Planning (M.U.R.P.): Regular Programme				
Year	I	Elective Politics and Planning (ARC2247E05)	Credits / Hours per week	3
Semester	II	Year of Introduction: 2012 Year of Syllabus Revision:2017	Maximum Marks / Grade	100
Mode of Transaction		Lectures and Studio		
Course Outcome (CO)				
CO1 Understanding the relationship of planning with political institutions; governance and accountability.				
CO2 Understand the relationship between planning and finance for effective planning of projects				
CO3 Assess the effect of state decisions on planning				
CO4 Analyzing the social, economic and political consequence of planning				

Unit No.	Topic/Unit	Contact Hours	Weightage (%)	BT Level	CO	PSO	Elements of Employability (Emp)/ Entrepreneurship (Ent)/ Skill Development (SD)	Relevance to Local (L)/ National (N)/ Regional(R)/Global (G) developmental needs	Relation to Gender (G), Environment and Sustainability (ES), Human Values (HV) and Professional Ethics (PE)
1	UNIT 1: Interface between urban governance, politics and planning. Politics of space and spatiality; conflict and convergence of interests related to space; issues in urban land management	4	10%	1 & 2	CO1	PSO1, PSO3	Emp	G	ES

2	UNIT 2: Development and development planning in the urban context; centralization vs. decentralization; role of the state, market and other agencies. Politics of distributive and social justice in urban areas: land use, housing, water supply, sanitation, health, education and recreation.	11	25%	1 & 2	CO1, CO3 & CO4	PSO1, PSO2	Emp	R	ES
3	UNIT 3: Politics of accountability and good governance in urban local self-government. Politics of participation and role of civil society - NGOs, community-based organizations and corporate organizations in urban management and development.	9	20%	1 & 2	CO1& CO3	PSO1, PSO4,	Ent	R	HV
4	UNIT 4: Politics of provision financing and pricing; decision making and decision taking. Politics of State and bureaucracy. Politics of Regeneration and Redevelopment	9	20%	1 & 2	CO2	PSO4, PSO5	Ent	N	PE
5	UNIT 5: National and International case studies on planning Case Studies on political decisions and their impact on urban and regional development.	12	25%	1, 2, 3& 4	CO4	PSO2, PSO4	SD	G	G, ES, HV, PE

Reference Books

1.	Socio Political Information about Urban Planning, Doris Holleb, University of Chicago [1969]
2.	Evaluating urban planning efforts: approaches to policy analysis, Ian Masser and Susan Batty, Aldershot, 1983
3.	Politics and Planning, M V Joshi and S V Khare, Harshad Prakashan (1975)
4.	Does the Civil Society Matter? Governance in Contemporary India, (ed) Rajesh Tandon and Ranjita Mohanty, Sage Publications Ltd (2016)
5.	Control and urban planning, J Brain McLoughlin, Faber and Faber (1973)

TERM WORK AND EXAMINATION

35 marks of the Term Work component will be distributed over smaller assignments as deemed fit by the subject teachers. Remaining 15 marks from the Term Work Component will be based on Review and Viva which will be scheduled at semester end based on the Term Work carried out for 35 marks.

These will be based on readings, writing, discussions, field visits, and assignments, with international and national examples/sources, there will be two or more assignments that will make students grasp and apply principles or methods covered in this subject. These will be in the form of: Seminar or writing assignments, on pre-approved readings or topics, done individually or in small teams and/or small project(s) on ecological planning themes done individually or in small teams.

UA Examination of 35 marks will be of two hours duration in which the focus will be to examine the overall comprehension of the subject and assimilation of knowledge. Questions will be framed to judge the student's ability to express personal views substantiated with cross referencing. IA Examination of 15 marks will be conducted halfway through the semester.

Bloom's Taxonomy Levels:

1. Remember 2. Understand 3. Application 4. Analysis 5. Evaluation 6. Creation

ELECTIVE: REGIONAL HYDROLOGY AND WATER MANAGEMENT

EXAM PAPER:	50 MARKS (35UA + 15IA)
TERM WORK:	50 MARKS
TOTAL:	100 MARKS

INTRODUCTION: Water being a National and State subject, it is vital to understand the dynamics of water systems and its relationship with human settlements at transboundary scales. In order to do so, understanding the hydrological patterns at regional levels in conjunction with the various layers that affect it is the purview of this subject.

		The Maharaja Sayajirao University of Baroda Faculty Technology and Engineering Department of Architecture		Academic Year		2025-26	
Master of Urban and Regional Planning (MURP): Regular Programme							
Year	I	Core / Elective / -Foundation Regional Hydrology and Water Management (ARC2250E08)		Credits / Hours per week		03	
Semester	II	Year of Introduction: 2022 Year of Syllabus Revision:		Maximum Marks / Grade		100 (combined passing) Paper: 35 Marks (UA) + 15 Marks (IA) TW/ VIVA: 50 Marks	
Mode of Transaction		Lectures and Studio			Passing Marks		50
Course Outcome (CO) With the successful completion of the course student should demonstrate and have capability to: CO1. To get familiar with Concepts and Terminology of Hydrology and Water Management CO2. To study soil erosion, prevention, conservation practices & its related model CO3. To get familiar with participatory regional appraisal for watershed management CO4. To get familiar with Computer Aided Applications for Water Management and Planning							

Unit No.	Topic/Unit	Contact Hours	Weightage (%)	BT Level	CO	PSO	Elements of Employability (Emp)/ Entrepreneurship (Ent)/ Skill Development (SD)	Relevance to Local (L)/ National (N)/ Regional(R)/Global (G) developmental needs	Relation to Gender (G), Environment and Sustainability (ES), Human Values (HV)and Professional Ethics (PE)
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1	Introduction to Hydrology and its Components Surface hydrology - River Systems, Stream Orders, Catchments and Basins Subsurface hydrology - Aquifers, various types of aquifers, groundwater terminology, groundwater development in India, areas of groundwater potential in India, groundwater pollution, conjunctive use, permeability, factors affecting permeability and its relationship with urban form and urban systems, artificial recharge and recharge wells.	9	20%	1,2	CO1	PSO5	EMP, SD	L, N, R, G	ES, PE
2	Water and its Relation to Natural Resources - Soil and Landscape Soil Erosion, Types of Soil Erosion, Estimation of Soil Erosion, Soil Loss Models. - Concept of watershed: Delineation of watershed, characteristics and management of watershed and its implication on regional plan - Water Management and Governance Administrative, Legislative, Financial Aspects and its Implementation - Water Resource in Coastal Areas: Introduction, Characteristics and Issues, Saline Water Intrusion, Prevention and Control of Saline Water Intrusion	12	27%	1,2,3,4,5	CO2	PSO1 PSO2 PSO5			
3	Participatory Regional and Rural Appraisal - Basic Principles of PRA - Structured Survey Techniques - Participatory Mapping and Modelling	12	27%	2,3,4,5,6	CO3	PSO2 PSO4 PSO5			
4	Application of GIS and Remote Sensing in Regional Hydrology.	12	26%	1,2,3,4,5,6	CO4	PSO3			
Reference Books:									
1.	Ghanshyam Das. "Hydrology and Soil Conservation Engineering" Prentice Hall of India Pvt. Ltd., New Delhi								
2.	Suresh, R. "Watershed Hydrology", Standard Publishers Distributors, New Delhi.								
3.	Murthy, J. V. S., "Watershed Management in India", Willey Eastern Limited, New Delhi.								
4.	Ministry of Water Resources Central Ground Water Board, "Rain water Harvesting Techniques to Augment Ground Water", Faridabad.								

5.	Subramanya K, "Engineering Hydrology", - Tata McGraw Hill Publication
6.	Raghunath, H. M. "Ground water". Willey Eastern limited
7.	Todd, D. K. "Ground water hydrology". John Wiley and sons
8.	"Hydrological Effects of Urbanization", A report of the sub-group on the effects of urbanization on the hydrological environment, The UNESCO Press, Paris 1974, ISBN No.: 92-3-101223-1

TERM WORK AND EXAMINATION

35 marks of the Term Work component will be distributed over smaller assignments as deemed fit by the subject teachers. Remaining 15 marks from the Term Work Component will be based on Review and Viva which will be scheduled at semester end based on the Term Work carried out for 35 marks.

These will be based on readings, writing, discussions, field visits, and assignments, with international and national examples/sources, there will be two or more assignments that will make students grasp and apply principles or methods covered in this subject. These will be in the form of: Seminar or writing assignments, on pre-approved readings or topics, done individually or in small teams and/or small project(s) on ecological planning themes done individually or in small teams.

UA Examination of 35 marks will be of two hours duration in which the focus will be to examine the overall comprehension of the subject and assimilation of knowledge. Questions will be framed to judge the student's ability to express personal views substantiated with cross referencing. IA Examination of 15 marks will be conducted halfway through the semester.

Bloom's Taxonomy Levels: 1. Remember 2. Understand 3. Application 4. Analysis 5. Evaluation 6. Creation

ARC2242S02**PLANNING STUDIO II****LECTURES:****3 HOURS****STUDIO:****12 HOUR****INTERNAL ASSESSMENT: 350 MARKS****EXTERNAL ASSESSMENT: 150 MARKS****TOTAL: 500 MARKS****INTRODUCTION:**

Region is a fuzzy and complex construct that varies according to issues and values that one chooses to consider or focus on. Both for the ecological and the human/societal interests, planning at regional scale becomes necessary. Planning for any region has intra and inter territorial linkages and implications. Understanding goals and the inter-relationship of various constituencies within a larger whole is imperative. The focus will be on understanding the scales and types of issues and values and how to address them. The studio's comprehensive approach is geared toward spatial and infrastructure planning while considering socio-economic, ecological, and experiential parameters.

		The Maharaja Sayajirao University of Baroda Faculty Technology and Engineering Department of Architecture		Academic Year		2025-26	
Master of Urban and Regional Planning (M.U.R.P.): Regular Programme							
Year	I	Core Planning Studio II (ARC2242S02)		Credits / Hours per week		15	
Semester	II	Year of Introduction: 2012 Year of Syllabus Revision: 2017		Maximum Marks / Grade		500	
Mode of Transaction		Lectures, Studio and Group Discussions					
Course Outcome (CO)							
CO1 Generate awareness about various concepts and aspects of region and regional planning principles and methods.							
CO2 Make students able for designing research through understanding of inter-dependencies for planning a region - district / mega / metro / ecological regions							
CO3 Proficiency to conduct independent research: Scoping, Framing, and Designing							
CO4 Developing ability to apply various data analytical tools in the area of urban and regional planning.							

Unit No.	Topic/Unit	Contact Hours	Weightage (%)	BT Level	CO	PSO	Elements of Employability (Emp)/ Entrepreneurship (Ent)/ Skill Development (SD)	Relevance to Local (L)/ National (N)/ Regional(R)/Global (G) developmental needs	Relation to Gender (G), Environment and Sustainability (ES), Human Values (HV) and Professional Ethics (PE)
1	UNIT 1: Introduction	35	15%	1, 2 & 3	CO1	PSO1, PSO4			

	Basic Concepts in Regions, Defining a region: fluidity and "purposive-ness", Typology of Regions: Resource Regions, Mega, Macro, Meso, and Micro Regions.						Emp, Ent, SD	L,N,R,G	ES, HV, PE
2	UNIT 2: Understanding of Regional Dynamics Regional Dynamics: Growth of Mega and Metro Regions: Scale, Complexity and its impact on national and international scenario, convergence and divergence. Understanding of Regional Economy, Ecology and Special Regions Regional Economy, competitiveness among regions, backward and leading regions in development; Special Regions: SEZ, Agro Regions, Ecological regions, etc.	70	30%	1, 2 & 3	CO2	PSO1, PSO4, PSO5			
3	UNIT 3: Application of descriptive statistics tools and use of software packages for data analysis. Students will learn to analyze data using various descriptive statistics tools and relevant software.	30	15%	1, 2, 3 & 4	CO4	PSO3			
4	UNIT 4: Implementation The students will be given a live case study to understand the complexities of planning the region, inter-sector, scalar interface, integration, etc. It is also expected that the students during and after preparing the plan will present it to the stakeholders to get their feedback.	90	40%	2, 3, 4, 5 & 6	CO3	PSO2, PSO4, PSO5			

Reference Books

1.	Chand, M.,Puri, V.K., 2011 (paperback), <i>Regional Planning in India</i> , Allied Publishers Ltd, Mumbai.
2.	Birch, E.L. (ed.), 2008, <i>The Urban and Regional Planning Reader</i> , Routledge, New York, NY.
3.	Misra, R.P., <i>Regional Planning</i> . ISBN-13: 978-8170224945
4.	Chandana, R.C., <i>Regional Planning and Development</i> . ISBN-10: 9327225414
5.	<i>Regional Planning</i> , United States National Resources Committee. Nabu Press, Charleston, SC, 2010.
6.	Sanyal, B. et al., 2012, <i>Planning Ideas That Matter: Livability, Territoriality, Governance, and Reflective Practice</i> , MIT Press, Cambridge, MA.
7.	McElvany S., 2012, <i>Geodesign: Case Studies in Urban and Regional Planning</i> , ESRI Press, Redlands, CA.
8	Steinitz, C., 2012, <i>A Framework for Geodesign: Changing Geography by Design</i> , ESRI Press, Redlands, CA.
9	McHarg, I., 1999 (25th Anniversary Edition), <i>Design with Nature</i> , Wiley, Hoboken, NJ,
10	Lynch, K., 1976, <i>Managing the Sense of a Region</i> , MIT Press, Cambridge, MA.
11	Nina Zumal, John Mount (2014). <i>Practical Data science in R</i> , Managing Publication Company
12	Kothari, C.R. (2014). <i>Research Methodology Methods and Techniques</i> (2nd revised edition). New Delhi, India: New Age International (p) Limited, Publishers.
13	Kumar, R. (2011/2005/1999). <i>Research Methodology: a step-by-step guide for beginners</i> (3rd revised edition). New Delhi, India: SAGE Publications India Pvt Ltd.
14	Babbie, E. (2001). <i>The Practice of Social Research</i> (9th ed.). Belmont, CA:Wadsworth.
15	Patton, M. (2002). <i>Qualitative Research and Evaluation Methods</i> (3rd Ed.). London, UK: Sage Publications Ltd.

TERM WORK AND EXAMINATION

35 marks of the Term Work component will be distributed over smaller assignments as deemed fit by the subject teachers. Remaining 15 marks from the Term Work Component will be based on Review and Viva which will be scheduled at semester end based on the Term Work carried out for 35 marks.

These will be based on readings, writing, discussions, field visits, and assignments, with international and national examples/sources, there will be two or more assignments that will make students grasp and apply principles or methods covered in this subject. These will be in the form of: Seminar or writing assignments, on pre-approved readings or topics, done individually or in small teams and/or small project(s) on ecological planning themes done individually or in small teams.

UA Examination of 35 marks will be of two hours duration in which the focus will be to examine the overall comprehension of the subject and assimilation of knowledge. Questions will be framed to judge the student's ability to express personal views substantiated with cross referencing.

IA Examination of 15 marks will be conducted halfway through the semester.

Bloom's Taxonomy Levels:

1. Remember 2. Understand 3. Application 4. Analysis 5. Evaluation 6. Creation

ARC2241P02**PRACTICAL TRAINING****LECTURES:** ---**STUDIO:** ---**EXAM VIVA:** S / NS**TERM WORK:** ---**TOTAL:** S / NS

INTRODUCTION: Region is a fuzzy and complex construct that varies according to issues and values that one chooses to consider or focus on. Both for the ecological and the human/societal interests, planning at regional scale becomes necessary. Planning for any region has intra and inter territorial linkages and implications. Understanding goals and the inter-relationship of various constituencies within a larger whole is imperative. The focus will be on understanding the scales and types of issues and values and how to address them. The studio's comprehensive approach is geared toward spatial and infrastructure planning while considering socio-economic, ecological, and experiential parameters.

		The Maharaja Sayajirao University of Baroda Faculty Technology and Engineering Department of Architecture			Academic Year			2025-26				
Master of Urban and Regional Planning (MURP): Regular Programme												
Year	I	Core / Elective / Foundation Practical Training (ARC2241P02)			Credits / Hours per week			Total - Credits				
Semester	II	Year of Introduction: 2017-18 Year of Syllabus Revision: 2022			Maximum Marks / Grade			Viva: - S/NS				
Mode of Transaction		Office Training, Documentation through various modes										
Course Outcome (CO): At the end of the course, students will be able to: CO1 Get exposure to various activities and processes involved in the planning practices. CO2 Apprise the lessons learnt through reports and presentations.												
Unit No.	Topic/Unit				Contact Hours	Weightage (%)	BT Level	CO	PSO	Elements of Employability (Emp)/ Entrepreneurship (Ent)/ Skill Development (SD)	Relevance to Local (L)/ National (N)/ Regional(R)/Global (G) developmental needs	Relation to Gender (G), Environment and Sustainability (ES), Human Values (HV)and Professional Ethics (PE)
1	Office Training at a department approved organization on the given assignments for 4 to 6 weeks during the summer vacation - • Students will undergo supervised training by a senior professional from the organization • Students will complete all the assignments given to the student.					60%	2, 3, 4, 5	CO1	PSO1 PSO2 PSO4			

	- Students will need to develop an understanding and have active involvement in the process of planning practices of the chosen organization in which training is being undertaken - Students' work will be evaluated periodically by the supervising senior					PSO5			
2	Compilation, Documentation and Evaluation After coming back from the training, students will make the final documentation and a presentation which will be submitted to the institute.		40%	4,5,6	CO2	PSO1 PSO3			
Note: As a part of Academic course curriculum of MURP, the students have to complete Office Training before Semester III.									

TERM WORK AND EXAMINATION

The student intern will present her/his work in a written document followed by a viva during the beginning of Semester 3. "Satisfactory" (S) or "Not Satisfactory" (NS) grade will be assigned based on (a) the office supervisor's evaluation report; (b) the student's written report on her/his document, and the viva. This grade will be reflected in a separate marksheets only for Summer Internship.

Bloom's Taxonomy Levels: 1. Remember 2. Understand 3. Application 4. Analysis 5. Evaluation 6. Creation

MURP Semester – III

ARC2309C10 HERITAGE AND CONSERVATION

LECTURES: 2 HOURS
STUDIO: 1 HOUR

EXAM PAPER: 50 MARKS
TERM WORK: 50 MARKS
TOTAL: 100 MARKS

INTRODUCTION: Urban and Regional Planning involves the development of not only virgin/new areas but also existing areas, generally the old/inner city. In the former, the ecology and environment of the area will have to be considered and/or conserved while in the old city the same will apply to monuments or precincts. Thus it is important to expose the student to the concept, need and tools of natural and built heritage and their conservation.

	The Maharaja Sayajirao University of Baroda Faculty Technology and Engineering Department of Architecture		Academic Year				2023-24				
Master of Urban and Regional Planning (M.U.R.P.): Regular Programme											
Year	II	Core Heritage and Conservation (ARC2309C10)		Credits / Hours per week				03			
Semester	III	Year of Introduction: 2012 Year of Syllabus Revision:2017		Maximum Marks / Grade				100			
Mode of Transaction		Lectures and Studio									
Course Outcome (CO) CO1 Understanding natural and built heritage within a setting; its various layers that make up any city/urban area along with its surroundings (local and regional scale). CO2 Learn about the relevance of mapping natural and built heritage through mapping its various layers. CO3 Generate awareness of policies, programs and legislation regarding natural and built heritage. CO4 Developing a sensitization to urban and regional conservation and protection of natural and built heritage through understanding its principles, processes and practices across India and global level and methods for inclusions of same through planning CO5 Analyzing and applying urban and regional conservation and protection methods for natural and built environment to study area selected via a justified rationale and theoretical and practical premise.											
Unit No.	Topic/Unit			Contact Hours	Weightage (%)	BT Level	CO	PSO	Elements of Employability (Emp)/ Entrepreneurship (Ent)/ Skill Development (SD)	Relevance to Local (L)/ National (N)/ Regional(R)/Global (G) developmental needs	Relation to Gender (G), Environment and Sustainability (ES), Human Values (HV)and

									Professional Ethics (PE)
1	UNIT 1: Introduction Introduction to Heritage and Conservation-tangible and intangible-built and natural; heritage and historical/environmental context, typology, classification and listing/inventories.	04	10%	1 & 2	CO1	PSO1, PSO4	Emp, SD	L,N,R,G	ES, HV,PE
2	UNIT 2: Acts and laws Acts and laws recognizing conservation / regeneration; heritage toolkit; Implications of 74th Constitution Amendment Act.	06	13%	1 & 2	CO3	PSO4			
3	UNIT 3: Conservation Concept, degrees of intervention-restoration, preservation, consolidation, rehabilitation, reproduction, reconstruction; preparation of conservation and heritage management plans. Cost of conservation and social justice implications. Aspects of conservation-legal, emotional, cultural, political, environmental and financial.	06	13%	1,2 & 4	CO4 & CO5	PSO2 PSO4			
4	UNIT 4: Built Heritage Built heritage- Understanding the historical context-role of memory, identity and sense of belonging; concept of Historical urban landscapes, determinants of built form, relevance of culture, Integration of historic monuments / areas / cores / urban systems in the developmental process and land use, regulatory measures and community involvement; strategies for conservation; Built Modern Heritage - Identification, documentation and promotion. Offer related exercise.	07	14%	1, 2,3, 4,5 & 6	CO2, CO4 & CO5	PSO1 PSO2 PSO5			
5	UNIT 5: Natural Heritage Ecological and environmental context, urban and regional context, relevance of sustainability, micro/macro climate, recreational potential; issues of development, land use and conservation; strategies for conservation. Offer related exercise.	06	14%	1, 2,3, 4,5 & 6	CO2, CO4 & CO5	PSO1 PSO2 PSO5			
6	UNIT 6: Heritage Conservation and the development process 1 Urban Regeneration, renewal, rehabilitation.	04	10%	1 & 2	CO5	PSO1 PSO5			
7	UNIT 7: Heritage Conservation and the development process 2 Urban revitalization, reconstruction and redevelopment - concepts, interventions, processes, approaches, methods and tools.	06	13%	1& 2	CO4 & CO5	PSO1 PSO2 PSO5			
8	UNIT 8: Heritage as a motivating force in Urban Regeneration; Cultural and heritage-based tourism - nature, potential and prospects, marketing aspects; heritage conservation and sustainable development.	06	13%	1& 2	CO4 & CO5	PSO1 PSO2 PSO5			
Reference Books									
1.	RaoKhadpekar, Nirmala, 2008, Urban Revitalization: Perspectives and Initiatives, ICFAI University Press								
2.	Kain, Roger (Ed.), 1981, Planning for Conservation: An International Perspective, Mansell, London.								
3.	Naoum, Cohen, 2001, Urban Planning Conservation and Preservation, McGraw hill,								
4.	Longtreth, Richard (Ed.), 2008, Cultural Landscapes: Balancing Nature and Heritage in Preservation Practice, University of Minnesota Press.								
5.	Girard F.L. and Nijkamp, 2009, Cultural Tourism and Sustainable Local Development, Ashgate, Burlington.								

6.	ASI Charter (laws, legislations and regulations)
7.	Charter for the Conservation of Unprotected Architectural Heritage and Sites in India - INTACH.
8.	The Burra Charter- The Australian ICOMOS Charter for places of Cultural Significance.
9.	Hoi An Protocols for Best Conservation Practice in Asia

TERM WORK AND EXAMINATION

The term work will comprise of **two parts, each 25 marks.**

1. **Seminar**-this will comprise critical reading of given texts with presentation and discussion in class. Submission will consist of a written copy of the same at the end of term. (To be done individually. Marking done equally but separately for presentation in class and term end submission).
2. **Case study**-this will comprise a detailed study and class presentation of an example of built or natural area conservation. Submission will consist of a report of the same at the end of term. (To be done individually. Marking done equally but separately for presentation in class and term end submission).

Examination will be of two hours duration in which the focus will be to examine the overall comprehension of the subject and assimilation of knowledge. Questions will be framed to judge the student's ability to express personal views substantiated with cross referencing

Bloom's Taxonomy Levels: 1. Remember 2. Understand 3. Application 4. Analysis 5. Evaluation 6. Creation

ARC2310C11**PROJECT MANAGEMENT****LECTURES:****2 HOURS****STUDIO:****1 HOUR****EXAM PAPER: 50 MARKS****TERM WORK: 50 MARKS****TOTAL: 100 MARKS****INTRODUCTION:**

To realize any planning assignment at the grass root level it has to be broken down to projects. The subject takes a holistic approach towards project management by of studying the projects in terms of their Planning, Finance, Implementation as well as Evaluation becomes an important.

		The Maharaja Sayajirao University of Baroda Faculty Technology and Engineering Department of Architecture			Academic Year				2025-26			
Master of Urban and Regional Planning (M.U.R.P.): Regular Programme												
Year	II	Core Project Management (ARC2310C11)			Credits/ Hours per week				03			
Semester	III	Year of Introduction: 2017 Year of Syllabus Revision:			Maximum Marks / Grade				100			
Mode of Transaction		Lectures and Tutorials										
Course Outcome (CO) CO1 Understand the relationship between Urban Planning and Project Management at various Levels. CO2 Understand and apply the key factors such as Planning, Financing, Implementation and Evaluation of Projects. CO3 Generate awareness about various regulatory frameworks governing projects.												
Unit No.	Topic/Unit				Contact Hours	Weightage (%)	BT Level	CO	PSO	Elements of Employability (Emp)/ Entrepreneurship (Ent)/ Skill Development (SD)	Relevance to Local (L)/ National (N)/ Regional(R)/Global (G) developmental needs	Relation to Gender (G), Environment and Sustainability (ES), Human Values (HV)and Professional Ethics (PE)
1	UNIT 1: Project Planning and Development Introduction to Projects; Nature of planning projects; what is project planning in Project Management sense? Project Life Cycle; Planning tools; Project Planning Process - Steps, what is Logical Framework Approach? Relationship between projects and planning issues including sectoral policy at: Local, State and National levels				14	30%	1 & 2	CO1	PSO1 PSO3	Emp, Ent, SD	L, N, R, G	PE

	Pre-Project Activities - Project Identification, Pre-feasibility Analysis, Prioritization, Feasibility Studies; Project Appraisal: Concept of appraisal. Why appraisal? What is appraisal? Market analysis – Macro Environment survey, survey methods, market characterization, demand forecasting; Technical Analysis – Magnitude, processes, materials, equipment, factors of Production, implementation schedule; suitability of the plans, layout and design, location of the project; location analysis; supporting infrastructure requirements; Risk analysis and Risk Management Plan; Capital Budgeting – Estimation of costing of components; developing over project cost; Social cost benefit analysis – UNIDO, Merles, ZOPP/GOPP, etc.								
2	UNIT 2: Project Finance Defining Terms-finance, finance function, financial management, types of finance, project finance; Methods of /Resources for financing a Project– own resources, equities, accessing debt market (bond financing), loans, sell out, co-financing, refinancing, options, venture capital, government grants/subsidies etc; Issues in financing a project in general and urban infrastructure projects in specific; Defining Project worthiness: different options, mechanisms; Credit Rating and assessment: Origin and Evolution of project finance technique: need for alternative model; what is project finance approach? How it is different from Balance Sheet Approach? Project finance and PPP.	11	25%	1 & 2	CO2	PSO1 PSO2			
3	UNIT 3: Project Implementation, Project Evaluation and Project Monitoring Project characteristics - pitfalls in management of a project; Techniques of management; Planning milestones - responsibility charts and principal responsibility, principles of activity planning; Project Implementation – methods, hurdles, facilitative factors; Project culture: line management, steering committee, role of project manager; Project Control: cost and time, quality - ISI standards and its application to Indian context; Introduction to Project Management Software (MsProjects) and its usage. Project Monitoring: Techniques of Monitoring of Development Works. Project Evaluation: Types of evaluation - concurrent, ex-ante and ex-post. Methods of evaluation, techniques of evaluation, end results. Assign a Hypothetical/studio related project for understanding the working and application of learnt principles.	11	25%	1, 2, 3, 4, &5	CO2	PSO2 PSO3			
4	UNIT 4: Regulatory Frameworks Governing Projects National Rehabilitation and Resettlement Policy (2007) - Social Impact mitigation; National Environmental Policy (2006) – Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) – Land Acquisition Act 2013	9	20%	4,5	CO3	PSO5 PSO4			
Reference Books									
1.	Prasanna Chandra Projects, 2009, McGraw Hill, New Delhi.								

2.	Barker, Stephen and Cole, Rob. Brilliant Project Management, 2007 Pearson Education
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TERM WORK AND EXAMINATION There will be two assignments of 25 marks each. They could include: Visit to Finance / Budget Section of Urban Local Bodies or Urban Utilities and preparing a detailed case study about its finances. Seminar with selected readings and presentations to be made individually or in groups. Paper and report. Examination will be of two hours duration in which the focus will be to examine the overall comprehension of the subject and assimilation of knowledge. Questions will be framed to judge the student's ability to express personal views substantiated with cross referencing
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Bloom's Taxonomy Levels: 1. Remember 2. Understand 3. Application 4. Analysis 5. Evaluation 6. Creation

ARC2311C12**PUBLIC URBAN FINANCE****LECTURES:****2 HOURS****STUDIO:****1 HOUR****EXAM PAPER: 50 MARKS****TERM WORK: 50 MARKS****TOTAL: 100 MARKS****INTRODUCTION:**

Resource management and mobilization is considered as a major aspect for any planning exercise. In Urban and Regional Planning, it requires to understand the entire flow and management systems of finances vertically and laterally to realize efficient planning.

 The Maharaja Sayajirao University of Baroda Faculty Technology and Engineering Department of Architecture	Academic Year						2025-26					
Master of Urban and Regional Planning (M.U.R.P.): Regular Programme												
Year	II	Core Public Urban Finance (ARC2311C12)			Credits / Hours per week			03				
Semester	III	Year of Introduction: 2017 Year of Syllabus Revision:			Maximum Marks / Grade			100				
Mode of Transaction		Lectures and Studio										
Course Outcome (CO)												
CO1 Understand Public Financing - State and Urban finance including Municipal Public Finance.												
CO2 Analyze the Municipal and other agencies, Finances and Investment Planning in relation to Urban Development Activities.												
Unit No.	Topic/Unit				Contact Hours	Weightage (%)	BT Level	CO	PSO	Elements of Employability (Emp)/ Entrepreneurship (Ent)/ Skill Development (SD)	Relevance to Local (L)/ National (N)/ Regional(R)/Global (G) developmental needs	Relation to Gender (G), Environment and Sustainability (ES), Human Values (HV)and Professional Ethics (PE)
1	UNIT 1: Introduction Roles of Public Finance in Urban and Regional Planning; Why Public Finance Matters? Public Finance Theories and Applications to Developing Countries; Theories of Central-Local Fiscal Relations; The Tiebout Hypothesis, Fiscal Federalism, and Decentralization; Experiences of Fiscal Decentralization in Developing Countries				12	25%	1 & 2	CO1	PSO1	Emp, Ent, SD	L, N, R, G	ES, HV, PE

2	UNIT 2: Expenditure and Revenue Assignments in Developing Countries Principles of Expenditure Assignments; Principles of Taxation; Indirect Taxes and user charges	11	25%	1,2 & 4	CO1	PSO1, PSO4			
3	UNIT 3: Resource Management at Urban Level City Governments' Own-Source Revenues: Real Property Taxes, User Charges and Off-Budget Financing Mechanisms, Land-based Financing; Intergovernmental Transfers and Debt Financing; Principles of Intergovernmental Transfers and IGT in India, Sub- national (municipal) Government Borrowing; Foreign and Non- Government Sector Participation: Foreign Aid and Direct Investment, Non-government Sector Participation.	13	30%	1,2 & 4	CO1 CO2	PSO1, PSO4, PSO5			
4	UNIT 4: Public Financial Management	9	20%	1 & 2	CO2	PSO1, PSO3, PSO4			

Reference Books

1.	Mathur, O.P. and Peterson, George - State Finance Commissions and Urban Fiscal Decentralization in India, 2006 NIPFP
2.	Ministry of Finance, <i>Reports of Central Finance Commissions especially 13th and 14th Finance Commissions, Government of India, New Delhi.</i>
3.	<i>Government of India 73rd and 74th Constitution Amendment, Acts 1992</i> , Government of India, New Delhi.
4.	Pandey, K.K. <i>Stimulating Revenue Base of ULBs in India</i> , 2010 IIPA
5.	Downs, Anthony <i>An economic theory of Democracy</i> , 1957
6.	Oates, Wallace <i>Theory of Fiscal Federalism</i> , 1972
7.	King, David <i>Fiscal Tiers: The Economics of Multi-level Government</i> , 1984.
8.	Wildasin, D. <i>Urban Public Finance</i> , 1986.

TERM WORK AND EXAMINATION

There will be two assignments of 25 marks each. They could include:

Visit to Finance / Budget Section of Urban Local Bodies or Urban Utilities and preparing a detailed case study about its finances.

Seminar with selected readings and presentations to be made individually or in groups.

Paper and report.

Examination will be of two hours duration in which the focus will be to examine the overall comprehension of the subject and assimilation of knowledge. Questions will be framed to judge the student's ability to express personal views substantiated with cross referencing

ARC2312C13**RESEARCH AND THESIS PREPARATION**

LECTURES: 2 HOURS
STUDIO: 1 HOUR

EXAM PAPER: 50 MARKS
TERM WORK: 50 MARKS
TOTAL: 100 MARKS

INTRODUCTION: In preparation of the final semester's master's level planning thesis, this subject deals with, in three/four interrelated units, ideas, knowledge, and skills necessary for understanding the issues and methods of a planning thesis and developing a sound proposal for conducting the same soon after the third semester is over. We want to develop and help adhere to certain norms and quality standards for the purposes, processes, and products of a master's level thesis.

A student who successfully completes this course will (A) appreciate the role of systematic and eclectic research as well as scholarship (mainly) within the domain of planning discipline and profession and (B) be able to apply, demonstrate, and build upon knowledge and skills learned in this subject in the coming semester and years. We will collectively strive to meet the following objectives to their fullest possible extent using various means and methods of teaching and learning.

	The Maharaja Sayajirao University of Baroda Faculty Technology and Engineering Department of Architecture				Academic Year				2023-24			
Master of Urban and Regional Planning (M.U.R.P.): Regular Programme												
Year	II	Core Research and Thesis Preparation (ARC2312C13)			Credits / Hours per week				03			
Semester	III	Year of Introduction: 2017 Year of Syllabus Revision:			Maximum Marks / Grade				100			
Mode of Transaction		Lectures and Studio										
Course Outcome (CO) CO1 Understand the importance and relevance of research and engagement with respect to National and inter-national context. CO2 Understand and learn to propose various types of research (qualitative and quantitative) and data collection and data analysis methods and conduct the same through appropriate research design in relation to Urban and Regional planning. . CO3 Develop skills for understanding, evaluating, developing, and communicating a good inquiry-based planning thesis and presenting a well-written and developed research proposal/Thesis. CO4 Provide a mutually supportive, informative, and interactive network of resources (people and opportunities) for the students in order to make the final research / thesis experience (process and product) more meaningful and rewarding.												
Unit No.	Topic/Unit				Contact Hours	Weightage (%)	BT Level	CO	PSO	Elements of Employability (Emp)/ Entrepreneurship (Ent)/ Skill Development (SD)	Relevance to Local (L)/ National (N)/ Regional(R)/Global (G) developmental needs	Relation to Gender (G), Environment and Sustainability (ES), Human Values

3.	Qualitative Research and Evaluation Methods by Michael Quinn Patton
4.	The Routledge Handbook of Planning Research Methods (Routledge Handbooks) 1st Edition by Elisabete A. Silva, Patsy Healey, Neil Harris, and Pieter Van den Broeck (Editors)
5.	Research Methods in Urban and Regional Planning (Tsinghua University Texts) 1st Edition by Xinhao Wang (Author), Rainer Hofe (Author)
6.	Other readings given or brought by the students during the semester

TERM WORK AND EXAMINATION

Based on readings, writing (synopsis / reflection notes), discussions, panel discussions, and two or more assignments (of total 50 marks) that will make students grasp and apply principles or methods covered in this subject.

Examination (of total 50 marks) will be of two hours duration in which the focus will be to examine the overall comprehension of the subject and assimilation of knowledge. Questions will be framed to judge the student's ability to express clearly personal understanding of the subject matter to be substantiated with relevant text, diagrams, and/or cross referencing.

Bloom's Taxonomy Levels: 1. Remember 2. Understand 3. Application 4. Analysis 5. Evaluation 6. Creation

ARC2314E07**ELECTIVE : TRANSPORTATION PLANNING****LECTURES:****2 HOURS****STUDIO:****1 HOUR****EXAM PAPER: 50 MARKS****TERM WORK: 50 MARKS****TOTAL: 100 MARKS****INTRODUCTION:**

Developing countries are becoming more significant in the world stage but they suffer serious transport problems as well. The purpose of the travel-forecasting in transportation planning process is to perform a prediction of travel demand in order to estimate the likely transportation consequences of several transportation alternatives that are being considered for implementation. Cities have witnessed increasing usage of private vehicles because they are yet to develop efficient and adequate multi-modal transport systems to meet increased travel requirements.

		The Maharaja Sayajirao University of Baroda Faculty Technology and Engineering Department of Architecture			Academic Year			2023-24			
Master of Urban and Regional Planning (M.U.R.P.): Regular Programme											
Year	II	Elective Transportation Planning (ARC2314E07)		Credits/ Hours per week				03			
Semester	III	Year of Introduction: 2017 Year of Syllabus Revision:		Maximum Marks / Grade				100			
Mode of Transaction		Lectures and Studio									
Course Outcome (CO) CO1 understand the concept of transportation planning process CO2 understand four-step travel demand model and to estimate urban trips CO3 understand different forms and characteristics of public transport and multi-modal systems											
Unit No.	Topic/Unit			Contact Hours	Weightage (%)	BT Level	CO	PSO	Elements of Employability (Emp)/ Entrepreneurship (Ent)/ Skill Development (SD)	Relevance to Local (L)/ National (N)/ Regional(R)/Global (G) developmental needs	Relation to Gender (G), Environment and Sustainability (ES), Human Values (HV)and Professional Ethics (PE)
1	UNIT 1: Introduction to Transport Planning Urban Transport Planning Process: Urban travel patterns - Study area delineation- Zoning - Planning surveys - Urban activity system- Sustainable urban transport - Systems approach.				30%	1,2 & 4	CO1	PSO1 PSO2 PSO4	Emp Ent SD	L R N G	G ES HV PE

	Travel Demand Estimate: Trip based and activity-based approach - Four stage travel demand modelling- Data needs and outputs - Quick response techniques - Survey designs.	13							
2	UNIT 2: Methods of Trip Generation Trip Generation: Productions & Attractions - Influential factors –Trip rate Analysis-Category analysis- Simple & Multiple linear regression models Trip Distribution: Interchange matrix – Growth factor methods – Synthetic methods –Calibration of Gravity model Modal Split: Influential factors – Diversion curves & surfaces- Discrete choice models, Concept, Types, Binomial Logit models and Multinomial Logit models Trip Assignment: Trip Assignment procedure – Diversion curves- All or Nothing assignment - Multipath assignment - Capacity restraint assignment – User equilibrium and system equilibrium approach	18	40%	3, 4, 5 & 6	CO2	PSO3 PSO4 PSO5			
3	UNIT 3: Public Transportation Introduction to Public Transportation : Urban travel demand/supply by individual and mass transportation – characters of urban mass transportation problems. Importance of Public transportation: – Policy for urban bus services: Global Scenario. Characteristics of public Transit System: Typical basics, characters of selected mass transit system (BRTS) – various multi-modal transit systems – MT vehicle dimensions, – selected criteria of more and rural, fleet size demand.	14	30%	2, 3, 4, 5 & 6	CO3	PSO3 PSO4 PSO5			

Reference Books

1.	Khisty C Jotin., LallB.Kent, Transportation Engineering – An Introduction, PHI Learning Private Limited, 3rd Edition, Delhi, 2014.
2.	Ortuzar, Juan. de Dios and Willumsen Luis G., Modeling Transport, John Wiley & Sons, 4th edition, 2011
3.	Papacostas C.S. and Prevedouros, P.D., Transportation Engineering & Planning, PHI Learning Private Limited, 3rd Edition, Delhi, 2014
4.	An introduction to regional planning – Glasion J (1974) Bulit Environment series – Hutingson.
5.	Transportation and Traffic Engg. Handbook (Second edition): Institute of transportations Engineers.
6.	Entropy in urban and regional modeling: by Wilson Aa (1970) PLON.
7.	Bowmen, J. and M. ben-Akiva, Activity based travel Forecasting; in Activity based travel forecasting. Washington,DC: U.S. Department of Transportation, Report DOT-97-17.
8.	Bruton M.J., Introduction to Transportation Planning, Hutchinson of London,1988
9.	Chakraborty P., Das N., Principles of Transportation Engineering, PHI, New Delhi, 2003
10.	Dickey J.W., Metropolitan Transportation Planning, Tata Mc-Graw Hill 1980
11.	Hutchinson B.G., Principles of Urban Transportation System Planning, Mc- Graw Hill, 1974.

TERM WORK AND EXAMINATION

There will be two assignments of 25 marks each.

One of them may include case study and problem solving. These will be in the form of:

Seminar with selected readings and presentations to be made individually or in groups.
Paper and report.

Examination will be of two hours duration in which the focus will be to examine the overall comprehension of the subject and assimilation of knowledge.
Questions will be framed to judge the student's ability to express personal views substantiated with cross referencing

Bloom's Taxonomy Levels: 1. Remember 2. Understand 3. Application 4. Analysis 5. Evaluation 6. Creation

ARC2315E08**ELECTIVE : PLANNING AND DISASTER MANAGEMENT****LECTURES:****2 HOURS****STUDIO:****1 HOUR****EXAM PAPER: 50 MARKS****TERM WORK: 50 MARKS****TOTAL: 100 MARKS****INTRODUCTION:**

Disaster Management is needed to reduce, or avoid the potential losses from hazards, assure prompt and appropriate assistance to victims of disaster, and achieve quick and effective recovery.

	The Maharaja Sayajirao University of Baroda Faculty Technology and Engineering Department of Architecture		Academic Year				2023-24			
Master of Urban and Regional Planning (M.U.R.P.): Regular Programme										
Year	II	Elective Planning and Disaster Management (ARC2315E08)	Credits / Hours per week				03			
Semester	III	Year of Introduction: 2017 Year of Syllabus Revision:	Maximum Marks / Grade				100			
Mode of Transaction		Lectures and Studio								
Course Outcome (CO) CO1 Understand the Interface between Environment and Development with a focus on Disaster Management. CO2 Understand the various contexts leading to disaster.										
Unit No.	Topic/Unit		Contact Hours	Weightage (%)	BT Level	CO	PSO	Elements of Employability (Emp)/ Entrepreneurship (Ent)/ Skill Development (SD)	Relevance to Local (L)/ National (N)/ Regional(R)/Global (G) developmental needs	Relation to Gender (G), Environment and Sustainability (ES), Human Values (HV)and Professional Ethics (PE)
1	UNIT 1: Environment, Development and Disaster – Interface Concept of Development and Environment, Environment and Development Nexus. Impact of human activities on environment, environment and poverty links. Disaster classification, concepts, hazards, vulnerability, risks, human response to disaster, impacts		12	26%	1 & 2	CO1	PSO1 PSO2 PSO4	Emp, SD	L, R, N, G	G, ES, HV, PE
2	UNIT 2: Environmental Management		12	27%	3, 4, 5 & 6	CO1 CO2	PSO3 PSO4			

	Environmental Impact Assessment, thresholds, indicators, audits, environmental certification, lifecycle analysis, Introduction to environmental accounting. Environmental policy, Acts and regulations; Environmental education, participatory approaches, emerging concepts					PSO5			
3	UNIT 3: Disaster Mitigation and Management Relevance of disaster management in development and environment, disaster preparedness, prevention, displacement and development, Roles and responsibilities of government and non-government organizations, Disaster Education – awareness of individuals, communities and participation at various levels; Integrating disaster mitigation in the spatial planning process, provision of infrastructure for disaster mitigation.	12	27%	3, 4, & 5	CO2	PSO2 PSO4 PSO5			
4	UNIT 4: Policies and Legislation Pertaining to Environment and Disaster Management Policies and Legislation at various levels: Yokohama Strategy, Hyogo Framework of Action	9	20%	3, 4, 5 & 6	CO2	PSO2 PSO5			

Reference Books

1.	Rajib Shaw Community, Environment and Disaster Risk Management, Emerald Group Publishing Limited, 2010.
2.	Rajib Shaw HariSrinivas, Anshu Sharma Urban Risk Reduction An Asian Perspective, Emerald Group Publishing Limited, 2009.
3.	P C Sinha Introduction to Disaster Management, Anmol Publications, New Delhi, 2007.
4.	PardeepSahni, AlkaDhameja, Uma Medury Disaster Mitigation: Experiences and Reflections, PHI Learning Pvt. Limited, New Delhi, 2008.
5.	Jegadish Gandhi P Disaster Mitigation & Management Post Tsunami Perspectives, Deep & Deep Publications Pvt Ltd, New Delhi, 2007.
6.	NDMA Disaster Management Guidelines 2007-11 NDMA, Ministry of Home Affairs.
7.	Model Amendment in Town and Country Planning Legislations, Regulation for Land Use Zoning and Building Byelaws for Structural Safety, 2004 MHA.
8.	Ministry of Home Affairs National Policy on Disaster Management(NPDM) 2006, MHA.
9.	Publications of National Disaster Management Authority (NDMA) on Various Templates and Guidelines for Disaster Management.
10.	National Disaster Management Policy, 2009, GoI

TERM WORK AND EXAMINATION

Term work may be in the form of site visits to NDMA, NIDM with report writing. Seminar with selected readings and presentations to be made individually or in groups.

Examination will be of two hours duration in which the focus will be to examine the overall comprehension of the subject and assimilation of knowledge. Questions will be framed to judge the student's ability to express personal views substantiated with cross referencing

Bloom's Taxonomy Levels: 1. Remember 2. Understand 3. Application 4. Analysis 5. Evaluation 6. Creation

ELECTIVE : URBAN HYDROLOGY AND WATER MANAGEMENT

EXAM PAPER:	50 MARKS
TERM WORK:	50 MARKS
TOTAL:	100 MARKS

INTRODUCTION: As cities and various urban centers struggle with the issue of water crisis and water being one of the most important natural resources for the sustenance of urban activities, this subject focuses on the inter-relationship of human activity patterns with the availability and management of water.

		The Maharaja Sayajirao University of Baroda Faculty Technology and Engineering Department of Architecture				Academic Year			2023-24	
Master of Urban and Regional Planning (MURP): Regular Programme										
Year	II	Core / Elective / Foundation Urban Hydrology And Water Management			Credits / Hours per week		3 Hours Lecture: 02Hrs (1 PLAN + 1 WREMI) Studio : 01Hrs (1 PLAN faculty + 1 WREMI faculty)			
Semester	III	Year of Introduction: 2022 Year of Syllabus Revision:			Maximum Marks / Grade		100 (combined passing) Paper : 50 Marks TW/ VIVA: 50			
Mode of Transaction		Lectures and Studio			Passing Marks		50			
Course Outcome (CO) With the successful completion of the course student should demonstrate and have capability to: CO1. To get familiar with the relationship between man and water CO2. To get familiar with soil dynamics and conservation practices CO3. To familiarize with Rain Water Harvesting and its Current Trends as well as conservation practices CO4. To Understand Participatory Urban Appraisal in Urban Context CO5. To apply ICT and IOT for Water Management										
Unit No.	Topic/Unit		Contact Hours	Weightage (%)	BT Level	CO	PSO	Elements of Employability (Emp)/ Entrepreneurship (Ent)/ Skill Development (SD)	Relevance to Local (L)/ National (N)/ Regional(R)/Global (G) developmental needs	Relation to Gender (G), Environment and Sustainability (ES), Human

2.	Hall M. J. (1984), "Urban Hydrology", Elsevier Applied Science Publishers
3.	"Hydrological Effects of Urbanization", A report of the sub-group on the effects of urbanization on the hydrological environment, The UNESCO Press, Paris 1974, ISBN No.: 92-3-101223-1
4.	Ghanshyam Das. "Hydrology and Soil Conservation Engineering" Prentice Hall of India Pvt. Ltd., New Delhi
5.	Suresh, R. "Watershed Hydrology", Standard Publishers Distributors, New Delhi.
6.	Rajora, R. "Integrated Watershed Management", Field Manual for Equitable, Productive and Sustainable Development, Rawat Publications, New Delhi.
7.	Murthy, J. V. S., "Watershed Management in India", Willey Eastern Limited, New Delhi.

TERM WORK AND EXAMINATION

Examination will be of two hours duration in which the focus will be to examine the overall comprehension of the subject and assimilation of knowledge. Questions will be framed to judge the student's ability to express personal views substantiated with cross referencing
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Bloom's Taxonomy Levels: 1. Remember 2. Understand 3. Application 4. Analysis 5. Evaluation 6. Creation

ARC2318S03**PLANNING STUDIO III****LECTURES:****3 HOURS****STUDIO:****12 HOURS****INTERNAL ASSESSMENT: 250 MARKS****EXTERNAL ASSESSMENT: 250 MARKS****TOTAL: 500 MARKS****INTRODUCTION:**

Introduction to the concept of city region. Identification of specific functional region of cities within the zone of influence. Hinterland of metropolitan cities conurbation areas, cities along waterways, highways etc.

Students are required to prepare an integrated urban development plan for the identified city region incorporating components of phasing costing & pricing implementation mechanism etc. Periodic assessment in the form of reviews will be carried out with a final jury at the end of the exercise.

	The Maharaja Sayajirao University of Baroda Faculty Technology and Engineering Department of Architecture		Academic Year					2023-24		
Master of Urban and Regional Planning (M.U.R.P.): Regular Programme										
Year	II	Core Planning Studio III (ARC2318S03)	Credits / Hours per week					15		
Semester	III	Year of Introduction: 2012 Year of Syllabus Revision:2021	Maximum Marks / Grade					500		
Mode of Transaction		Studio, Lectures, Group Discussions								
Course Outcome (CO) CO1 Making students explore the subject through relevant literature review in the area of urban & regional planning CO2 Developing ability to document the existing scenario of selected city. CO3 Application of statistical tools and software for complex data analysis. CO4 Developing ability to identify the urban issues and resolve it through the design process.										
Unit No.	Topic/Unit		Contact Hours	Weightage (%)	BT Level	CO	PSO	Elements of Employability (Emp)/ Entrepreneurship (Ent)/ Skill Development (SD)	Relevance to Local (L)/ National (N)/ Regional(R)/Global (G) developmental needs	Relation to Gender (G), Environment and Sustainability (ES), Human Values (HV)and Professional Ethics (PE)
1	Introduction		35	15%	1,2	CO1, CO2	PSO1, PSO4	Emp, Ent, SD	L,N,R,G	ES, HV, PE

	Introduction to the concept of city region. Identification of specific functional region of cities within the zone of influence. Hinterland of metropolitan cities conurbation areas, cities along waterways, highways etc.								
2	Understanding fundamentals of city planning Basic principle of development of city in the frame of cultural economic and social aspects. Understand the Big cities and small cities which are national and regional economic, cultural and political centers.	70	30%	1,2,4	CO1, CO2	PSO1, PSO2, PSO4			
3	Application of descriptive statistics tools and use of software packages for complex data analysis Students will learn to analyze complex data using various descriptive statistics tools and relevant software.	30	15%	1,2,3,4	CO3	PSO3			
4	Critical analysis and development of city planning proposal Preparation of an integrated urban development plan for the identified city region incorporating components of phasing costing & pricing implementation mechanism etc. Periodic assessment in the form of reviews will be carried out with a final jury at the end of the exercise	90	40%	2,4,5,6	CO3, CO4	PSO2, PSO4, PSO5			

Reference Books

1.	General Development Control Regulations (GDCR)
2.	Urban and Regional Development Plans Formulation and Implementation (URDPFI) Guidelines
3.	UDPFI Guidelines
4.	Lynch, K., 1984 (third Edition), <i>Site Planning</i> , MIT Press Cambridge
5.	Sokhi, B. S. and SM Rashid, 1999, <i>Remote Sensing of Urban Environment</i> , Manak Publishers, New Delhi
6.	B. Edmund, 1967, Design of Cities
7.	C. Charles, The New Landscape: Urbanization in the Third World
8.	S. K. Kulshrestha, Urban Renewal in India: Theory, Initiatives and Spatial Planning Strategies
9.	R. Ramachandran, Urbanization and Urban Systems in India
10.	Gallion. A., Eisner. S., 1998 (fifth edition), <i>The Urban Pattern-City Planning and Design</i> CBS Publishers and Distributors, New Delhi, in arrangement with Van Nostrand Reinhold Company, USA.
11.	K.C. Sivaramakrishnan, Handbook of Urbanization in India

TERM WORK AND EXAMINATION

The final submission should include a concept plan, land use plan, sub-division plan, circulation plan, basic infrastructure plan, and a written report (A-4 paper) including all drawings (A-3 / A-2 / A-1 paper).

MURP Semester – IV

ARC2404C14

PLANNING THESIS

LECTURES: ---
STUDIO: 30 HOURS

INTERNAL ASSESSMENT: 500 MARKS
EXTERNAL ASSESSMENT: 500 MARKS
TOTAL: 1000 MARKS

INTRODUCTION: The final semester's master's level planning thesis project is about individual immersion in working and accomplishing the thesis. Each student will be required to prepare a thesis individually under a team of primary and secondary adviser/team of advisers who are experts in the chosen topic and are approved by the MURP Thesis Committee of the Department of Architecture. Though the primary and secondary thesis guides, along with their student(s) are responsible for the final direction, focus, and quality of work of thesis work, the students may discuss their work / progress with any of the MURP teachers of the program.

	The Maharaja Sayajirao University of Baroda Faculty Technology and Engineering Department of Architecture		Academic Year				2023-24			
Master of Urban and Regional Planning (M.U.R.P.): Regular Programme										
Year	II	Core Planning Thesis (ARC2404C14)	Credits / Hours per week				30			
Semester	IV	Year of Introduction: 2012 Year of Syllabus Revision:2017	Maximum Marks / Grade				1000			
Mode of Transaction		Studio and Tutorials								
Course Outcome (CO) CO1 Student will understand, to building an independent thesis proposal/research design CO2 To enable student to conduct field survey, data collection and data analysis independently CO3 To enable student to draw meaningful inferences from the research and relevant application in real world CO4 Learn to improve the contents, format, and presentations of thesis work in systematic manner										
Unit No.	Topic/Unit		Contact Hours	Weightage (%)	BT Level	CO	PSO	Elements of Employability (Emp)/ Entrepreneurship (Ent)/ Skill Development (SD)	Relevance to Local (L)/ National (N)/ Regional(R)/Global (G) developmental needs	Relation to Gender (G), Environment and Sustainability (ES), Human Values (HV)and Professional Ethics (PE)
1	UNIT 1: Research Premise and Rationale, Question/Problem Statement/Goals and Objectives and/or Hypotheses with Relevant Literature Review		120	20%	1,2,3,4 & 5	CO1	PSO1, PSO2,	Emp, Ent, SD	L,N,R,G	ES, HV, PE

2	UNIT 2: Research Design and Methods, Data Collection and Preliminary Analysis, and Tentative Results	140	30%	1,2,3,4 & 5	CO2, CO3,	PSO2, PSO3, PSO5			
3	UNIT 3: Pre-final Jury: Required Revisions of the above two stage and Results based Conclusions	120	20%	1,2,3,4 & 5	CO3, CO4	PSO1, PSO4, PSO5			
4	UNIT 4: Final analysis inferences, recommendation Report writing, final Jury	70	30 %	1,2,3,4,5 & 6	CO3, CO4, CO5	PSO1, PSO4,			
Reference Books									
1.	Some handouts and readings decided by the MUPR Thesis Committee of the Department of Architecture and the primary and secondary thesis guides.								

TERM WORK AND EXAMINATION

The thesis will be reviewed periodically, at least thrice during the semester in front of panel of experts / advisers. The thesis should be presented in the form of drawings, sketches, tables, documents, etc. and accompanied by a comprehensive report as per the norm guidelines issued by MURP Thesis Committee of the Department of Architecture. The thesis report will need to be progressively written and submitted for each of the following stages:

1. Research Premise and Rationale, Question/Problem Statement/Goals and Objectives and/or Hypotheses with Relevant Literature Review
2. Research Design and Methods, Data Collection and Preliminary Analysis, and Tentative Results
3. Pre-final Jury: Required Revisions of the above two stage and Results based Conclusions
4. Final Jury

The final jury will be held in which the student is (students are) required to defend her/his/their thesis through her/his/their presentation and report. Quality and timely progress are of prime importance. The MUPR Thesis Committee of the Department of Architecture will be devise and implement and modify as needed the policies related the Thesis work. They, along with the primary and secondary guides, will be evaluating and giving marks for the thesis work progress and its quality for each stage. The final jury will have a panel of external experts appointed by the university in front of whom the student(s) will present the thesis work in the given format and time schedule. The student(s) will also be responsible for submitting required number of copies of the thesis as per the guidelines and timeline determined by MUPR Thesis Committee of the Department of Architecture as a partial requirement for the MURP degree.

Bloom's Taxonomy Levels:

1. Remember 2. Understand 3. Application 4. Analysis 5. Evaluation 6. Creation