Model Curriculum

for

M. Plan (Urban and Regional Planning)

(Effective from the Academic year 2024-25)

Semester- I

<table>
<tr><th colspan="4">PLANNING STUDIO-I</th></tr>
<tr><td>Course Code</td><td>MURP101</td><td>CIE Marks</td><td>50</td></tr>
<tr><td>Teaching Hours/Week (L:S: SDA)</td><td>12 hrs (4:8:2)</td><td>Viva Marks</td><td>50</td></tr>
<tr><td>Total Hours of Pedagogy</td><td>156</td><td>Total Marks</td><td>100</td></tr>
<tr><td>Credits</td><td>08</td><td>Examination duration</td><td>15 mins per student</td></tr>
<tr><td colspan="4">Course Learning objectives:
By taking this course Students will be able to:
• Plan and design spaces for the needs of people and the function of both rural and urban communities by undertaking a critical study of socioeconomic data in relation to the spatial characteristic analysis.
• Understand the basis for zoning regulation and building by-laws in various contexts defined for neighbourhood plans and master plans by using norms, guidelines, and innovative approaches.
• Understand the division of land use and distribution patterns for both rural and urban human settlements.</td></tr>
<tr><td colspan="4">Exercise-1: Foundation Studio (2 weeks):</td></tr>
<tr><td colspan="4">▪ Basic Principles, aims and objectives of Physical planning.
▪ Space standards, Normative Standards, Performance Standards
▪ Topography Map analysis
▪ Urban Development Plan Formulation and Implementation (UDPFI): Planning norms and standards.
▪ Development Control: Zoning Regulations, Sub-division Regulations and Building byelaws and Regulations for conservation of historical, heritage and natural areas.
▪ Neighbourhood planning: Principles and Techniques, Site Analysis.
▪ Planning Surveys, socio-economic surveys and studies for preparation of Master Plans.
▪ Preparation of Master Plans for Local Planning Area.
▪ URDPFI Guidelines for Plan Preparation and Implementation.</td></tr>
<tr><td>Teaching-Learning Process</td><td colspan="3">Blended learning: Power point presentation to elaborate on key topics.</td></tr>
<tr><td colspan="4">Exercise-2: Neighbourhood Appreciation (Group assignment) (2 weeks)</td></tr>
<tr><td colspan="4">The neighbourhood appreciation exercise aims to enable the students to understand and contextualize the location of the area to the city, zone, and area in which the particular place is situated. This is done with the socio-economic, spatial, and cultural characteristics of that city, zone, location, etc. The main purpose is to make the students appreciate the locational attributes of land parcels for future development in a city. Due to the size of the area, this exercise is done in groups of students being assigned to a particular area.</td></tr>
</table>

The following planning issues at the area level should be identified:

- Review of the Master Plan /Zonal/ Area plan concerning the selected areas.
- Appreciation/Analysis of ward-level data.
- Perception of areas in terms of legal/illegal/authorized/unauthorized, Slums, Urban Aesthetics.
- Social Categorizations of people- Type of population living, people's perception about the area, and its planning problems.
- Land use includes Agriculture land and land-use conflicts, extent (%) of broad land use such as commercial, industrial, residential, institutional, and recreational.
- The extent of formal/informal activities present in the area including their location and conflicts.
- General land tenure of the area and land value for different uses
- Major types of transport, type of roads, the hierarchy of roads, type of transport modes used.
- Amenities: Location of Socioeconomic and Physical infrastructure and their problems as perceived by the local population. Look for specific infrastructure such as Water supply, drainage (water logging areas), waste collection and disposal system, sanitation, education, healthcare and banking facilities, etc.
- Environmental Issues: Open Spaces – Availability and extent of open space to the built-up area, garbage disposal, encroachment (through photographic evidence and sketches)
- Locating the study area in the zone, city, and regional context for all the above aspects.

Teaching-Learning Process	***Blended learning***: Power point presentation and webinars. ***Data Collection & Analysis.*** ***Student Presentations:*** Student Group presentations.

Exercise-3: Master Plan revision for a small/medium town (Group assignment) (10 weeks)

A Town is a multi-dimensional, dynamic, and futuristic space. Understanding the town involves appreciating its several dimensions and including them in the planning process. The job of a physical planner is not merely to understand the existing conflicts in development but to emerge out of this and to come out with a practical vision for the town. To arrive at this vision, a planner needs to understand the dynamics of various components of the town and how and at what level interventions can be made to achieve that vision.

A group of students is expected to study a small to a medium-sized town in terms of its present problems and issues and project a futuristic vision in terms of scenario building.

The exercise shall involve the following:

- Revision of Master Plan for a small/medium-sized town.
- Students in groups shall engage in primary data collection such as primary surveys, land-use map

updating/verification, and verification of physical attributes.

- The bulk of the data may be obtained through secondary sources like Govt. websites/ Publications/ offices.
- Visit to the selected town shall focus on meeting various stakeholders/departments to ascertain their respective plans for the proposed plan period.
- Interaction with the local planning authority/ development authority and their consultants to procure any missing data.
- The proposed Master Plan at the time of presentation shall present more than one scenario of development. The study template of Neighbourhood analysis shall form the basis for investigation and proposals.
- Students divided according to selected study templates shall contribute to the preparation and submission of a Revised Master Plan document along with the proposed land use maps (but may exclude Zoning Regulations) for their SEE.

Teaching-Learning Process	***Blended learning***: Power point presentation and webinars. ***Data Collection & Stakeholder Engagement.*** ***Collaborative and Cooperative learning:*** Students should work as a group and present the compilation of work starting with Introduction, Preparing Master Plan report and Land Use Maps.

Studio –

Students have to complete the Studio Assignments handed by the Studio Coordinator/Faculty in accordance with course work. Faculty and Students (in a Faculty-Student ratio of not more than 1:10) are to be involved in small groups to interact together to enhance learning and application skills. Students should interact with Planning and Civic agencies of medium and large-sized towns/cities to understand their functioning and problems or foresee what can be undertaken for study in the form of research/ case studies/projects, and for creative and innovative methods to solve the identified problem.

• Students must work on different software/s(tools)to simulate, analyze, and authenticate the output to interpret and conclude.

• Students must familiarize themselves with codes of standards to narrow the gap between academia and the industry.

• Students shall prepare reports for the exercise(s) for which they will be assessed in the SEE Viva Voce.

All activities should enhance student's abilities for employment and /or self-employment opportunities, management skills, Statistical analysis, fiscal expertise, etc.

These exercises are intended to give students –

- Confidence in working along with Planning and civic agencies.

- Work on different software/s (tools) to Simulate, analyze, and authenticate the output to interpret and conclude.
- Understand the various stakeholders – both public and private.
- Involve in case studies and field visits/fieldwork.
- Accustom with the use of various Acts and legal provisions in preparation of Master Plans/Regional Development Plans/Appreciation reports, etc.,

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Examination (SEE) i.e., Viva Voce is 50%. The minimum passing mark for the CIE is 50% of the maximum marks. Minimum passing marks in Viva is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Viva-Voce) taken together.

Continuous Internal Evaluation:

CIE marks shall be awarded by a committee comprising of Principal/Dean/ Special Officer/ PG Course Coordinator/ HOD/ Guide of the department. The CIE marks awarded for Planning Studio, shall be based on tests/assignments based on Exercise-1 (Foundation Studio), Exercise-2 (Neighborhood appreciation), Periodic progress of Exercise-3 (Master Plan revision) of the student throughout the semester, presentation skills in seminars, and submission of the report.

Semester End Examination (Viva Voce):

1.The student needs to submit his/her report done for Exercise-3 (Master Plan revision), including the data collection for the Viva examination, at least one day prior to the Viva examination to the PG course coordinator/HOD/Special officer.

2. The Viva-voce will be evaluated by one external examiner appointed by the University along with one internal examiner appointed by the Department.

3. The viva-voce marks awarded for Planning Studio, shall be based on the evaluation of report submission, presentation skill and performance in Question-and-Answer session in the ratio 30:10:10.

4. The viva-voce marks list generated is to be signed by both internal and external examiners and submitted to VTU in the sealed cover through the principal of the institution**.**

Suggested Learning Resources:

Books

1. URDPFI guidelines, 2016, Ministry of Housing and Urban Development.
2. Census of India publications, Govt. of India.
3. Revised Master Plan 2016, Bangalore Development Authority, 2006.
4. Revised Master Plan 2031 draft, Bangalore Development Authority, 2017

Web links and Video Lectures (e-Resources):

1

1.Centre for Liveable Cities:
https://www.youtube.com/c/CentreforLiveableCities

2. Urban Planning Explained:
https://www.youtube.com/channel/UC6GZxJAucQK7HBFynRG1Msw/videos

Skill Development Activities Suggested:

- Guest Lecture from domain experts from Industry.
- Case Studies.
- Site Visits to Govt. Agencies/Offices for understanding their roles and collecting information pertaining to the studio activities.

Course outcome (Course Skill Set)

At the end of the course the student will be able to:

Sl. No.	Description	Blooms Level
CO1	Critically evaluate physical planning principles, aims, and objectives, including space, normative, and performance standards.	L4
CO2	Assess topography maps and apply planning norms and standards in urban development plans (UDPFI).	L4
CO3	Design planning surveys and socio-economic studies for Master Plans.	L5
CO4	Develop and implement zoning regulations, subdivision regulations, and building by-laws for conservation.	L5
CO5	Formulate a Master Plan with stakeholder input and multiple development scenarios.	L6

Program Outcome of M. Plan (URP) program:

Sl. No.	Description	POs
1	Acquire outstanding fundamental knowledge in the field of Urban Planning.	PO1
2	Encompass the ability to work in collaboration with interdisciplinary teams and stakeholders.	PO2
3	Demonstrate creativity in the problem-solving process through professional quality graphic presentations, use of GIS software, and Policy decisions.	PO3
4	Acquire outstanding knowledge & software skills for redesigning, monitoring, and improving Cities and Regions' functioning.	PO4
5	Understanding the diverse needs of values and systems of society and providing Smart, Sustainable, and data-centric solutions.	PO5
6	Demonstrate design and policy solutions that integrate contextual, social, economic, cultural, ethical, and environmental concerns.	PO6
7	Ability to undertake independent/option-based research and exploration of advanced and emerging topics.	PO7
8	Appraise professional standards and ethical responsibilities as a team member/stakeholder.	PO8
9	Acquire outstanding knowledge and understanding of the current trends in Urban Planning.	PO9

✔ **-High Impact**

Mapping of COs and POs:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	✔								✔
CO2	✔			✔		✔			
CO3		✔	✔		✔		✔		✔
CO4						✔		✔	
CO5		✔			✔	✔		✔	✔

REMOTE SENSING AND GIS			
Course Code	**MURP102**	CIE Marks	50
Teaching Hours/Week (L:S:SDA)	4 hrs (2:2:0)	Viva Marks	50
Total Hours of Pedagogy	52	Total Marks	100
Credits	03		

Course Learning objectives:

By taking this course:

- Students are expected to have obtained the necessary skills in describing, illustrating the concepts of Urban data management.
- Understand the concept of Remote Sensing applications in Town & Country Planning, also applying the elements of GIS and Geo-Spatial platforms for data analysation
- Apply remote sensing and GIS tools to analyse big data, meta-data in urban planning discipline.

Module-1

Basic principles of Remote Sensing

Lecture -

- Concept and Scope of Remote Sensing: Definitions, Process, and Characteristics of Remote Sensing System, Advantages and Limitations.
- Concept of Electromagnetic Radiation (EMR): Wavelength Frequency-energy relationship of EMR, EMR Spectrum, its properties, EMR wavelength regions and their applications.
- Energy Interaction in the atmosphere: Scattering, absorption, transmission, atmospheric windows. Energy Interactions with Earth Surface Features.

Teaching-Learning Process	***Blended learning:*** *Power point presentation to elaborate more on key topics.* ***Practical:*** *Application of concepts into GIS/RS software and producing a portfolio*

Module-2

Remote Sensing platforms and sensors

Lecture -

- Types and Characteristics of Sensor: Imaging and non-imaging sensors, Active and passive sensors, Resolution of Sensors - Spectral, Spatial, Radiometric & Temporal.
- Swath, coverage, Scale, Mapping unit, multi-band concepts, False Colour Composites, Multispectral and Hyper-spectral Remote Sensing

Practical -

- Show Remote Sensing and GIS software platforms and students can get a hang of the new software and its UI. Downloading Satellite imagery, File import and conversion, Layer stack, Mosaic, creation of AOI and image subsets/clipping
- False-colour composite and visual change identification
- Feature identification and identification keys
- Spectral profile generation

Teaching-Learning Process	***Blended learning:*** *Power point presentation to elaborate more on key topics.* ***Practical:*** *Application of concepts into GIS/RS software and producing a portfolio*

<table>
<tr><th colspan="2">Module-3</th></tr>
<tr><td colspan="2">Advanced Remote Sensing analysis techniques
Practical -
Indices (NDVI, NDBI, etc)
Supervised and unsupervised classification with accuracy assessment, kappa coefficient, and matrix
Pattern recognition (Spatial and temporal)
Time series and Change detection techniques.</td></tr>
<tr><td>Teaching-Learning Process</td><td>Blended learning: Power point presentation to elaborate more on key topics.
Practical: Application of concepts into GIS/RS software and producing a portfolio</td></tr>
<tr><th colspan="2">Module-4</th></tr>
<tr><td colspan="2">Basic concepts for working in GIS
Definition and Components of Geographic Information System, Functionality, and Areas of GIS Application, Advantages and Limitations of GIS
Variables - points, lines, polygon,
Spatial and Attribute Data, Data Structures - Raster and Vector data structures, Spatial and non-spatial data of GIS, and formats, Geo-database, Digitization, and georeferencing
Geography required for GIS -
Coordinate system and its types - Cartesian, Geographic, Projected
Northing & Easting and Latitudes & longitudes - conversion of lat-long between different formats
Difference between real earth surface, geoid, and ellipsoid
Concept of horizontal datum, vertical datum, UTM and UTM Zones
Map projections and their various types</td></tr>
<tr><td>Teaching-Learning Process</td><td>Blended learning: Power point presentation to elaborate more on key topics.
Practical: Application of concepts into GIS/RS software and producing a portfolio</td></tr>
<tr><th colspan="2">Module-5</th></tr>
<tr><td colspan="2">Advanced GIS functions -
Data processing and its visualization - Qualitative vs Quantitative data, Discrete vs Continuous data
Geoprocessing tools and queries - MCDM with AHP, DSM, DTM, slope and aspect, spatial interpolation, watershed analysis, model builder, etc
Digital Cartography - Creation of thematic maps, Composition, and colour schemes in a map and Various map elements including Map scales, Layouts, Legend, etc</td></tr>
<tr><td>Teaching-Learning Process</td><td>Blended learning: Power point presentation to elaborate more on key topics.
Practical: Application of concepts into GIS/RS software and producing a portfolio</td></tr>
</table>

Viva Deliverables -

Remote sensing project - The project should contain well-composed maps prepared using various Remote sensing tools and analyses learned across the whole semester and also using appropriate satellite imagery
Sample project examples: Land use/land cover change in a city over years, vegetation loss due to urbanization, Agricultural monitoring, etc

GIS project - The project should contain well-composed maps prepared using various GIS tools and analyses learned across the whole semester.
Sample project examples: Urban governance themes like (property tax, demographics, stormwater, etc), identification of suitable sites for urban development, morphometric analysis, etc

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Viva voce is 50%. The minimum passing mark for the CIE is 50% of the maximum marks. Minimum passing marks in Viva is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% in the sum total of the CIE (Continuous Internal Evaluation) and Viva- Voce taken together.

Continuous Internal Evaluation:

CIE marks shall be awarded by a committee comprising of Principal/Dean, Special Officer/ PG Course Coordinator/HOD and Faculties of the department. The CIE marks awarded shall be based on Quizzes/Internal examination set according to the faculty, progress of the student throughout the semester, presentation skills in seminars, and submission of the portfolios.

Viva voce Examination:

- The student needs to submit his/her portfolio as mentioned in the viva deliverables above, at least one day prior to the Viva examination to the Special Officer/PG course coordinator/HOD according to the format prescribed by the Department.
- The Viva-voce will be evaluated by one external examiner appointed by the University along with one internal examiner identified by the department/Special Officer.
- The viva-voce marks awarded shall be based on the evaluation of portfolio, presentation skill and performance in Question-and-Answer session in the ratio 30:10:10.
- The viva-voce marks list generated is to be signed by both internal and external examiner and submitted to VTU in the sealed cover through the principal of the institution**.**

Suggested Learning Resources:

Books

1. Rafael C.G. and Woods R.E., 1992, *Digital Image Processing* Pearson, 4th edition
2. S Jayaraman, *Digital Image Processing*
3. Van Sickle Jan,2017, Coordinates, Taylor and Francis
4. McHaffie Patrick, 2018, *GIS* Taylor and Francis
5. Bosso Maier Terry, 2016, *Online GIS and Spatial Metadata*, Taylor and Francis
6. eBooks Premium, 2017, *QGIS: Becoming a GIS Power User*
7. Quattrochi Dale A. 2017, *Integrating Scale in Remote Sensing and GIS*, Taylor and Francis,
8. Shekhar, *Encyclopaedia of GIS*, Springer
9. Alberto Gemelli, Adriano Mancini, Claudia Diamantini, SauroLonghi, Springer, *GIS to Support Cost-effective Decisions on Renewable Sources*

Web links and Video Lectures (e-Resources):

VTU online MOOC Course
https://online.vtu.ac.in/course-details/Geographic-Information-Systems-IIT-Roorkee
Esri MOOC Course
https://www.esri.com/training/catalog/5b31988374691f7ccc5c2a35/all-of-the-esri-moocs/

Skill Development Activities Suggested

- 30 Day Map challenge
- ESRI MOOC activities
- Exploring new GIS tools and models

Course outcome (Course Skill Set)

At the end of the course the student will be able to:

Sl. No.	Description	Blooms Level
CO1	Analyse the principles and characteristics of remote sensing and electromagnetic radiation.	L4
CO2	Assess remote sensing platforms, sensors, and their applications	L4
CO3	Apply advanced remote sensing techniques for spatial data analysis	L5
CO4	Utilize GIS components and data structures in spatial analysis	L5
CO5	Create thematic maps and perform geo processing using GIS tools.	L6

Program Outcome of M. Plan (URP) program:

Sl. No.	Description	POs
1	Acquire outstanding fundamental knowledge in the field of Urban Planning.	PO1
2	Encompass the ability to work in collaboration with interdisciplinary teams and stakeholders.	PO2
3	Demonstrate creativity in the problem-solving process through professional quality graphic presentations, use of GIS software, and Policy decisions.	PO3
4	Acquire outstanding knowledge & software skills for redesigning, monitoring, and improving Cities and Regions' functioning.	PO4
5	Understanding the diverse needs of values and systems of society and providing Smart, Sustainable, and data-centric solutions.	PO5
6	Demonstrate design and policy solutions that integrate contextual, social, economic, cultural, ethical, and environmental concerns.	PO6
7	Ability to undertake independent/option-based research and exploration of advanced and emerging topics.	PO7
8	Appraise professional standards and ethical responsibilities as a team member/stakeholder.	PO8
9	Acquire outstanding knowledge and understanding of the current trends in Urban Planning.	PO9

✔ **-High Impact**

Mapping of Cos and POs:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	✔								✔
CO2	✔			✔					
CO3			✔	✔			✔		
CO4			✔	✔					
CO5			✔	✔					

HISTORY AND THEORY OF PLANNING			
Course Code	**MURP103**	CIE Marks	50
Teaching Hours/Week (L:S:SDA)	3 hrs (3:0:0)	SEE Marks	50
Total Hours of Pedagogy	39	Total Marks	100
Credits	03	Exam Hours	03

Course Learning objectives:

By taking this course Students will be able to:

- Understand the evolution of human settlements and the philosophies guiding the early and modern Town and Country Planning with case studies
- Explain the systems of City planning in pre-&post-industrial periods
- Understand the various schools of thought guiding the theories on settlements and urban & regional planning

Module 1

Planning History

A brief history of human settlements, from the Stone Age and milestones, in prehistoric to the historic period. Evolution of physical forms as a result of geographical, geological, climatic, social, economic, political, and technological aspects of human settlements. Ancient river valley civilizations (Egyptian, Mesopotamian, Indus valley, and Chinese). Types of plans described in Vedic Scripts (Swastika, Karmukha, Dandaka, Padmaka, etc.) Settlements and their physical forms during various dynasties up to the 18th century and during colonization (Case studies – Jaipur, New Delhi, etc.), Town planning after independence (Case studies – Chandigarh, Gandhinagar, Amaravati, etc.).

Teaching-Learning Process	***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Module-2

Town Planning after 18th Century

The industrial revolution, Evolution of towns as per the functions of the towns, Constraints on city form, Elements of urban structure – Networks, Buildings, open spaces, etc. The form of the modern city in the age of automobile – Inner-city & Suburban area.

Teaching-Learning Process	***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Module-3

Utopian Concepts and Contribution of Planners

Theories and Philosophies by urban planners and philosophers like Patrick Geddes, Ebenezer Howard, Le Corbusier, Clarence Perry, CA Doxiades etc.

(Case studies – Garden Cities, Satellite Towns, first-generation Towns, and New Towns).

Teaching-Learning Process	***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Module-4

Theories of Urban Planning

Scope, purpose, and methods of Planning, the nature, and purpose of Town and Country Planning at National, Regional and local levels. Land-use planning, determinants of Land Use and spatial patterns of urban land use, Concentric Zone model, Sector model, Multiple Nuclei model, etc. The economic base of the city, the parts of the town and their relationship, planning standards, site layout and development, zoning, and Building Bye-Laws.

Teaching-Learning Process	***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Module-5

Settlement Analysis

Use of techniques of Location Quotient, Coefficient of Localization; Locational attributes of activity and population; Techniques for the Understanding structure of urban areas, land values, and density patterns; space standards for facility areas, utilities, and networks; Population, Distance criteria; Performance standards; Analysis of planning standards and norms, and Case studies.

Plan Preparation Techniques

The setting of Goals and Objectives; Methodologies for preparation of structure plan and strategy plan techniques; plan implementation techniques; public participation and plan implementation; techniques of urban renewal and central area redevelopment; Contents of a structured plan

Teaching-Learning Process	***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 50% of the maximum marks. Minimum passing marks in SEE is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% (50 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation:

The Internal Marking shall be done for 100 which will be scaled down to 50, the faculty in charge of the particular course can decide on any change in the structure of the internal examination which is to be conducted on 5th, 10th, and 15th weeks of the academic calendar preferably. The Internals shall be from a choice of written examinations/ Assignments/ Presentations allotted to students.

Semester End Examination:

- The SEE question paper will be set for 100 marks and the marks scored will be proportionately reduced to 50.
- The question paper will have ten full questions carrying equal marks.
- Each full question is for 20 marks.
- There will be two full questions (with a maximum of four sub-questions) from each module.

- Some subjects can choose to have a compulsory question under any one module.
- Each full question will have a sub-question covering all the topics under a module.
- The students will have to answer five full questions, selecting one full question from each module

Suggested Learning Resources:

Books

1. K.S. Ramegowda, 1972, *Urban and Regional Planning,* Prasaranga, University of Mysore
2. Rangwala, 2015, *Town planning in India*, Charotar Book Distributors, India, 28th Ed.
3. V D Mahajan, Ancient India
4. A.E.J. Morries, 1994, *History of Urban Form*: *Before the Industrial Revolution*, Routledge, New York, 3rd Ed.
5. Frederick Gibberd, 1959, *Town Design*, Praeger

Web links and Video Lectures (e-Resources):

VTU online MOOC Course
https://online.vtu.ac.in/course-details/Introduction-To-Urban-Planning

Skill Development Activities Suggested

- Guest Lectures.
- Case Studies

Course outcome (Course Skill Set)

At the end of the course the student will be able to:

Sl. No.	Description	Blooms Level
CO1	Analyze the evolution of human settlements from prehistoric to modern times through planners' perspective	L4
CO2	Gain a better understanding of Urban & Regional Planning techniques	L3
CO3	Evaluate utopian concepts and contributions of key urban planners.	L5
CO4	Apply theories of urban planning at national, regional, and local levels.	L5

Program Outcome of M. Plan (URP) program:

Sl. No.	Description	POs
1	Acquire outstanding fundamental knowledge in the field of Urban Planning.	PO1
2	Encompass the ability to work in collaboration with interdisciplinary teams and stakeholders.	PO2
3	Demonstrate creativity in the problem-solving process through professional quality graphic presentations, use of GIS software, and Policy decisions.	PO3
4	Acquire outstanding knowledge & software skills for redesigning, monitoring, and improving Cities and Regions' functioning.	PO4
5	Understanding the diverse needs of values and systems of society and providing Smart, Sustainable, and data-centric solutions.	PO5
6	Demonstrate design and policy solutions that integrate contextual, social, economic, cultural, ethical, and environmental concerns.	PO6
7	Ability to undertake independent/option-based research and exploration of advanced and emerging topics.	PO7
8	Appraise professional standards and ethical responsibilities as a team member/stakeholder.	PO8
9	Acquire outstanding knowledge and understanding of the current trends in Urban Planning.	PO9

✔ **-High Impact**

Mapping of COs and POs:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	✔					✔			✔
CO2	✔			✔					
CO3	✔					✔	✔		
CO4	✔				✔	✔			

PLANNING TECHNIQUES			
Course Code	**MURP104**	CIE Marks	50
Teaching Hours/Week (L:S:SDA)	3 hrs (3:0:0)	SEE Marks	50
Total Hours of Pedagogy	39	Total Marks	100
Credits	03	Exam Hours	03

Course Learning objectives:

By taking this course Students will be able to:

- Understand the significance of Village Planning, with the current proposals for Rural Development Schemes by the Indian Govt.
- Understand the concept, classification and delineation of planning regions using the different techniques
- Understand the principles of preparation of a district plan, and multi-level planning.

Module-1

Introduction to Regional Planning

Aims and Objectives and need for regional planning- Concept, Types, and Classification of regions. Delineation of planning regions by various Techniques-Principal component method, Composite index, Ridgeline technique, Gravity potential technique, Boundary girdle method. Regional Planning and Economic Development-Backward regions and Developed regions, Characteristics and reasons for backwardness.

Case study of any regional plan, Introduction to regional analysis. Linear Programming, Input and Output Analysis- Growth Model, Core-periphery models. Application of Regional Techniques in District Planning.

Teaching-Learning Process	***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Module-2

Theories of Regional Development

Regional Development Theories-W. Christaller (Central Place theory)

Von Thunen (Theory of agricultural location)

Losch (General theory of location)

A.Weber (Industrial location theory)

W. Isard (Theory of location and space economy)

Teaching-Learning Process	***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Module-3

Levels of Planning

Multilevel planning– Needs and methods of multi-level planning in India. Growth-Foci concept, regional planning as a tool to integrate rural and urban areas. District Planning: Integrated approach to district level planning (vertical and horizontal spatial integration); Rural-Urban spatial relationship.

District Development Plans– Guidelines for District Planning: Content and context and methodologies

Teaching-Learning Process	***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Module-4

Introduction to Village Planning

Nature of rural communities - Structure and forms of rural settlements, National planning, and rural development. Rural economy- Planning for the rural economic base, Agriculture, and other primary sectors. Rural Local Governments and Rural Institutions in Development Activities. 73rd Constitution Amendment Act and its impact on rural development.

Evaluation of rural development programs of central and state governments like MGNREGA, PMGSY, NBA, PMAY, NRIDP, NRHM, AMRUT, PURA, Bharat Nirman, etc. Planning for rural infrastructure, energy, roads, water supply, sanitation, and rural services–Agro services. Appropriate Technology for rural development like the use of local resources, Rainwater Harvesting, water recharge, soil conservation, and wasteland development. Village Industries and village trade and services.

Teaching-Learning Process	***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Module-5

Smart Village

Understanding Concept of Smart Village, Issues of Smart Village, Smart Village Performance Benchmark, Smart Village Policy and Mission, Planning and Management of Smart Village- A Case study of smart Village "PUNSARI" along with economics, Financing Smart Villages, Renewable energy in smart village.

Teaching-Learning Process	***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 50% of the maximum marks. Minimum passing marks in SEE is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% (50 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation:

The Internal Marking shall be done for 100 which will be scaled down to 50, the faculty in charge of the particular course can decide on any change in the structure of the internal examination which is to be conducted on 5th, 10th, and 15th weeks of the academic calendar preferably. The Internals shall be from a choice of written examinations/ Assignments/ Presentations allotted to students.

Semester End Examination:

- The SEE question paper will be set for 100 marks and the marks scored will be proportionately reduced to 50.
- The question paper will have ten full questions carrying equal marks.
- Each full question is for 20 marks.
- There will be two full questions (with a maximum of four sub-questions) from each module.
- Some subjects can choose to have a compulsory question under any one module.
- Each full question will have a sub-question covering all the topics under a module.
- The students will have to answer five full questions, selecting one full question from each module

Suggested Learning Resources:

Books

1. R.P.Misra, 1998, *Regional Planning: Concepts, Techniques, and case-studies*, Concept Publishers, New Delhi.
2. Government of Karnataka: *Karnataka Panchayat Raj Act*.
3. Corey Kenneth E.,Wilson Mark, 2006, *Urban and Regional Technology Planning***,** Knimbus Open eBooks
4. Bisello, Adriano., Vettorato, Daniele., Ludlow, David., Baranzelli, Claudia, 2021, *Smart and Sustainable Planning for Cities and Regions***,** Springer
5. Yasar Bahri Ergen, 2018, *An Overview of Urban and Regional Planning***,** Knimbus Open eBooks

Web links and Video Lectures (e-Resources):

- The Geoecologist: https://www.youtube.com/c/TheGeoecologist
- IIT Roorkee: https://www.youtube.com/playlist?list=PLLy_2iUCG87AAaDRVrD02Y1z44OXt5shB

Skill Development Activities Suggested

- Guest Lectures
- Webinars
- Case Studies

Course outcome (Course Skill Set)

At the end of the course the student will be able to :

Sl. No.	Description	Blooms Level
CO1	Understand the aims, objectives, and types of regional planning and their applications.	L3
CO2	Analyze regional development theories and their implications for economic development.	L4
CO3	Evaluate methods and techniques for delineating planning regions and their practical applications.	L5
CO4	Assess the integration of rural and urban areas through district and multi-Level Planning	L5
CO5	Apply concepts and strategies for rural development and smart village planning	L3

Program Outcome of M. Plan (URP) program:

Sl. No.	Description	POs
1	Acquire outstanding fundamental knowledge in the field of Urban Planning.	PO1
2	Encompass the ability to work in collaboration with interdisciplinary teams and stakeholders.	PO2
3	Demonstrate creativity in the problem-solving process through professional quality graphic presentations, use of GIS software, and Policy decisions.	PO3
4	Acquire outstanding knowledge & software skills for redesigning, monitoring, and improving Cities and Regions' functioning.	PO4
5	Understanding the diverse needs of values and systems of society and providing Smart, Sustainable, and data-centric solutions.	PO5
6	Demonstrate design and policy solutions that integrate contextual, social, economic, cultural, ethical, and environmental concerns.	PO6
7	Ability to undertake independent/option-based research and exploration of advanced and emerging topics.	PO7
8	Appraise professional standards and ethical responsibilities as a team member/stakeholder.	PO8
9	Acquire outstanding knowledge and understanding of the current trends in Urban Planning.	PO9

✔ **-High Impact**

Mapping of COs and POs:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	✔								✔
CO2	✔				✔				
CO3	✔						✔		
CO4		✔			✔				
CO5		✔			✔	✔			

APPLIED ECONOMICS AND SOCIOLOGY			
Course Code	**MURP105**	CIE Marks	50
Teaching Hours/Week (L:S:SDA)	3 hrs (3:0:0)	SEE Marks	50
Total Hours of Pedagogy	39	Total Marks	100
Credits	03	Exam Hours	03

Course Learning objectives:

By taking this course students learn:

- To analyse the interplay between culture, social structures, urban spatial structures, and economic systems.
- To assess and address contemporary urban economic challenges, indicators, and inclusive planning principles.

Module-1

The social fabric of Culture and the City

Learning how culture and the city are folded into each other and how they shape the city Patterns and trends of change in the Indian society, Concept of social structure and agency, culture and social institutions, Relations between social structures and spatial structures

Teaching-Learning Process	***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Module-2

Fundamentals of Urban Economy

Urban economic systems, historical development and key concepts. Roles of the primary, secondary, and tertiary sectors in urban development. Economic factors related to agriculture, resource management, industrialization, manufacturing processes, and the growth of services such as information technology, tourism, finance, and professional services for development of a region.

Economic Indicators and Urban Growth

Key economic indicators like GDP, employment rates, income levels, and economic inequality. Assessment of Business activity and investment trends and their impact on urbanization patterns, infrastructure development, and quality of life.

Contemporary Challenges, Opportunities, and Practical Applications

Case studies highlighting impact of globalization and technological advancements, including the development of smart cities. Sustainable development and green economy initiatives, as well as economic resilience and crisis management

Teaching-Learning Process	***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Module-3	
Social Fabric and Economic Dynamics Inter relation and influence of social fabric vs economy, including the relationship between quality of life, spending capacity, and varied economic activities. Economic behaviours and outcomes - Analysis of interactions between social structures and community in shaping the urban settings. **Economic Sectors and Population Demographics** Economic sector modelling around an area, based on the type of population class present. Impact and Influence of different socioeconomic factor through economic activities. Subsidized economies, forced economies, and the role of government interventions in shaping economic landscapes. **Case Studies and Impact Analysis** Case studies highlighting the real-world impact of the interplay between social fabric and economy, assessment of the effectiveness of different economic policies, and understand their implications on social structures and community well-being	
Teaching-Learning Process	***Blended learning:*** *Power point presentation to elaborate more on key topics.*
Module-4	
Economy and development Role of both social and physical infrastructure in supporting economic development how infrastructure projects cater to the needs of the population, contributing to overall development. Key areas of focus include transportation, healthcare, education, and public services, analysing their impact on urban growth and quality of life. **Economic Contributions and Corporate Social Responsibility** Case studies of Economic contributions of different sectors and the influence of corporate social responsibility (CSR) funding on urban development, role of private sector investment in public infrastructure, and the integration of economic and social objectives in urban planning.	
Teaching-Learning Process	***Blended learning:*** *Power point presentation to elaborate more on key topics.*
Module-5	
Inclusive planning Planning for Age and Disability - principles and practices of planning that address the needs of various age groups and individuals with disabilities age-friendly urban design, accessibility standards, and policies aimed at creating inclusive public spaces **Norms and Needs of Special Groups** social and economic norms and needs of special groups, including the elderly, people with disabilities, and other marginalized populations case studies and best practices in inclusive planning, emphasizing the importance of equity and accessibility in urban development	
Teaching-Learning Process	***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Assessment Details (both CIE and SEE)

The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 50% of the maximum marks. Minimum passing marks in SEE is 40% of the maximum marks of SEE. A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 50% (50 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation:

The Internal Marking shall be done for 100 which will be scaled down to 50, the faculty in charge of the particular course can decide on any change in the structure of the internal examination which is to be conducted on 5th, 10th, and 15th weeks of the academic calendar preferably. The Internals shall be from a choice of written examinations/ Assignments/ Presentations allotted to students.

Semester End Examination:

- The SEE question paper will be set for 100 marks and the marks scored will be proportionately reduced to 50.
- The question paper will have ten full questions carrying equal marks.
- Each full question is for 20 marks.
- There will be two full questions (with a maximum of four sub-questions) from each module.
- Some subjects can choose to have a compulsory question under any one module.
- Each full question will have a sub-question covering all the topics under a module.
- The students will have to answer five full questions, selecting one full question from each module

Suggested Learning Resources:

Books

1. Singh Ramesh, *Indian Economy: For Civil Services Universities and other Examinations*
2. Dholakia J R, *Perspectives on Inclusive Growth in India*
3. Taylor and Francis, 2017, *The Social Fabric of Cities*, Netto Vinicius
4. Jukka Gronow, 2020, *Deciphering Markets and Money: A Sociological Analysis of Economic Institutions*, JSTOR
5. Nancy Kleniewski, Alexander R. Thomas, 2019, *Cities, Change, and Conflict*, Taylor and Francis eBooks
6. Knimbus Open Journals, 2016, *Journal of African political economy and development*

Web links and Video Lectures (e-Resources):

- https://www.youtube.com/watch?v=avUsemgbjyU
- https://www.youtube.com/watch?v=MCPsUXV2oF8

Skill Development Activities Suggested

- Guest Lecture from expert.
- Attending webinars.

Course outcome (Course Skill Set)
At the end of the course the student will be able to:

Sl. No.	Description	Blooms Level
CO1	Analyze the relationship between culture, social structures, and urban spatial structures.	L4
CO2	Understand the fundamentals of urban economic systems and their historical development.	L3
CO3	Evaluate key economic indicators and their impact on urban growth and quality of life.	L5
CO4	Assess contemporary challenges and opportunities in urban economic development, including sustainability and resilience.	L5
CO5	Apply inclusive planning principles to address the needs of diverse populations in urban development.	L6

Program Outcome of M. Plan (URP) program:

Sl. No.	Description	POs
1	Acquire outstanding fundamental knowledge in the field of Urban Planning.	PO1
2	Encompass the ability to work in collaboration with interdisciplinary teams and stakeholders.	PO2
3	Demonstrate creativity in the problem-solving process through professional quality graphic presentations, use of GIS software, and Policy decisions.	PO3
4	Acquire outstanding knowledge & software skills for redesigning, monitoring, and improving Cities and Regions' functioning.	PO4
5	Understanding the diverse needs of values and systems of society and providing Smart, Sustainable, and data-centric solutions.	PO5
6	Demonstrate design and policy solutions that integrate contextual, social, economic, cultural, ethical, and environmental concerns.	PO6
7	Ability to undertake independent/option-based research and exploration of advanced and emerging topics.	PO7
8	Appraise professional standards and ethical responsibilities as a team member/stakeholder.	PO8
9	Acquire outstanding knowledge and understanding of the current trends in Urban Planning.	PO9

✔-High Impact
Mapping of Cos and POs:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	✔					✔			
CO2	✔								✔
CO3	✔			✔					
CO4	✔				✔	✔			
CO5		✔			✔	✔			

DEMOGRAPHY AND STATISTICS			
Course Code	**MURP106**	CIE Marks	50
Teaching Hours/Week (L:S:SDA)	2 hrs (2:0:0)	SEE Marks	50
Total Hours of Pedagogy	26	Total Marks	100
Credits	02	Exam Hours	03

Course Learning objectives:

By taking this course students will be able to:

- Understand the operational layers of the City's infrastructure.
- Understand the significance, operations, and impact of different types of infrastructures on City functionality.
- Understand the current technologies available for operations and maintenance of these city infrastructures in the Smart domain.

Module-1

Demography

Sources of demographic data in India, Settlement type, growth pattern, and structure: urban settlement analysis, Concentration: spatial, vertical and size, peri-urban sprawl, economic base; Rural Settlements – Size, occurrence, and character, transformation. Surveys and types of surveys. Population Census in India- Census Operation- Census Questionnaires and Schedules.

Teaching-Learning Process	***Direct method****: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Module-2

Population structure and composition

Age, sex, gender, marital status, caste, religion, literacy level, etc.; Age - sex ratio, structure, pyramid; dependency ratio; occupational structure; Fertility; mortality, migration analysis, natural growth of population, migration and its implications in planning;

Teaching-Learning Process	***Direct method****: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:*** *Power point presentation to elaborate more on key topics.*

Module-3

Statistical Analysis

Population and samples variables, simple statistical models, Measures of Central Tendency, Measures of Dispersion, Measures of the shape of the distribution of population, Chi-Square test.

Population Projection techniques

Population Projection techniques – arithmetic, geometric and logarithmic projections

Teaching-Learning Process	***Direct method**: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:** Power point presentation to elaborate more on key topics.*

Module-4

Population and Development

Concepts of Development and its measures: Human Development Index (HDI), Physical Quality of Life Index (PQLI), Gender Development Index (GDI), Concepts and Measures of Poverty, Human Poverty Index (HPI)

Teaching-Learning Process	***Direct method**: Lecture supported by conventional method of Blackboard and chalk to introduce the concepts* ***Blended learning:** Power point presentation to elaborate more on key topics.*

Module-5

Population Policies and Programmes

Evolution and Development of Population, Health and related Policies-National Population Policy 2000, National Health Policy 2017. Population and Policies on special groups, Ageing and Disabilities. Role of NITI Aayog in Health and Population related policies and programme. Population, Health and related Policies and Programmes at State & National Level

Teaching-Learning Process	***Blended learning:** Power point presentation to elaborate more on key topics.*

Assessment Details (both CIE and SEE)

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- Some subjects can choose to have a compulsory question under any one module.
- Each full question will have a sub-question covering all the topics under a module.
- The students will have to answer five full questions, selecting one full question from each module

Suggested Learning Resources:

Books

1. Bhende Asha A Kanitkar Tara , *Principles of Population Studies*
2. Pathak K B Ram F , *Techniques of demographic analysis*
3. T Veerarajan, *Probability, Statistics and Random Processes*
4. Papoulis Pillai, *Probability & Random Variables & Stochastic Processes 4ED*
5. Azmal Hussain , *Demographic Transition : A Global Perspective*
6. *Demography and the Economy*, National Bureau of Economic Research.

Web links and Video Lectures (e-Resources):

https://www.youtube.com/watch?v=vgWY2lwgmAA
https://www.youtube.com/watch?v=oqhYIL5fHR8
https://www.youtube.com/watch?v=ZJphOd5V3oU

Skill Development Activities Suggested

- Case studies
- Guest lectures

Course outcome (Course Skill Set)

At the end of the course the student will be able to:

Sl. No.	Description	Blooms Level
CO1	Understand the fundamentals and roles of economic sectors in urban development.	L3
CO2	Evaluate key economic indicators and their impact on urbanization and quality of life.	L5
CO3	Assess contemporary urban challenges and opportunities, including sustainable and resilient development.	L5
CO4	Apply inclusive planning principles to address diverse population needs in urban development.	L3

Program Outcome of M. Plan (URP) program:

Sl. No.	Description	POs
1	Acquire outstanding fundamental knowledge in the field of Urban Planning.	PO1
2	Encompass the ability to work in collaboration with interdisciplinary teams and stakeholders.	PO2
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✔ **-High Impact**

Mapping of COs and POs:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	✔								
CO2	✔			✔					
CO3					✔	✔			
CO4		✔			✔	✔			