Semester- II

PLANNING STUDIO-2			
Course Code	**MTCP201**	CIE Marks	50
Teaching Hours/Week (L:S:SDA)	12 hrs (4:8:2)	Viva Marks	50
Total Hours of Pedagogy	156	Total Marks	100
Credits	8	Examination duration	15 mins per student

Course Learning objectives:

By taking this course Students will be able to:

- Apply their skills in preparation of a development plan for any village by conducting the necessary surveys, data analysis.
- Evaluate and find solutions for the transportation problems of any intermodal traffic junctions and providing design and policy solutions.
- Create a placemaking solution for any public space by consulting with relevant stakeholders, analysing the issues on site and providing design solutions with the necessary symbolic significance to the site.

Exercise-1: Placemaking exercise (Group assignment) (4 weeks)

A City is bound to have small pockets of public places which inadvertently open up or become points of congestion and are in dire need of beautification to aid the public in the smoother and more vibrant operation of the spaces.

Students in consultation with any agencies like Bengaluru Smart City Ltd; DULT; BBMP; BDA (or similar UDA); etc., shall engage in preparing and proposing placemaking initiatives by incorporating the below:

- Comprehensive study of the public space available for placemaking project in consultation with the concerned authorities
- Design submissions with presentation drawing and specifications upon approval from the authorities
- Preparation of basic estimate and BOQ for the design finalized

Teaching-Learning Process	***Blended learning***: Power point presentation and webinars. ***Collaborative and Cooperative learning:*** Student Group presentations

Exercise-2: Rural Development Plan (Group assignment) (4 weeks)

- Preparation of a development plan for a rural habitat (Village)
- Conduct primary and Secondary Data collection on
  - Demography,
  - Infrastructure,
  - Economic base,
  - Services, Market,
  - Social amenities
- Evaluate the data in accordance with RADPFI guidelines.

Submit a policy document highlighting the policy changes and Village Plan through analytics on GIS.

Teaching-Learning Process	***Blended learning***: Power point presentation and webinars. ***Collaborative and Cooperative learning:*** Student Group presentations.

Exercise-3: Regional Planning Studio (Class Assignment) (8 weeks)

Preparation of District Development Plan

- The students (divided into two or more teams) are required to undertake a Regional Planning exercise by choosing any one of the Regions like Resource Region/River Valley Region/Command Area/ District or Metropolitan Region.
- The Planning exercise includes base map preparation, resource inventory, land utilisation pattern, ecology, drivers of economy of the region, sectoral analysis, special programs, implementation of various Govt. Schemes,
- The evaluation to be made for a future timeline (of 20 years) taking into account the sustainable growth of the region.
- Students will work out goals, formulate strategies and broad proposals for the comprehensive development of the Region. The presentation is through graphical representation, Spatial analysis and Report.
- The students are expected to apply the planning techniques and statistical tools to draw conclusions.
- The report prepared shall be in the prescribes format, including the group's detailed analysis, data, conclusion, policy recommendations etc.

Teaching-Learning Process	***Blended learning***: Power point presentation and webinars. ***Data Collection & Analysis.*** ***Student Presentations:*** Students should work as a group and present the compilation of work starting with introduction, Creating Master Plan report and Land Use Map.

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, analyse, 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, analyse, 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 (Placemaking), Exercise-2 (Rural development plan), Periodic progress of Exercise-3 (Regional planning studio) 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 (Regional planning studio), 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. Souparno Bannerjee et. al., 2021, *Waste-wise Cities*, NITI Aayog & Centre for Science and Environment.
2. Virendra Proag, 2021, *Infrastructure Planning and Management: An Integrated Approach*, Springer publications.
3. Alvin Goodman, Makrand Hastak, 2006, *Infrastructure Planning Handbook: Planning, Engineering & Economics*, McGraw Hill Publications
4. Charles K Coe, 2009, *Handbook of Urban Services*, Routledge
5. Karen Chappie, 2015, *Planning Sustainable Cities and Regions: Towards more equitable development,* Routledge

Web links and Video Lectures (e-Resources):

- https://youtu.be/fbuxkvcjlqk?si=XRj8OJIl8LIexrTl
- https://youtu.be/oFz_WLKwXLE?si=XpJQb_1k5bYOtXVx
- https://youtu.be/Up9186-dddI?si=-ulhlUakyLMSPeRW

Skill Development Activities Suggested:

- Guest Lecture from expert.
- Case Studies
- Site Visits to Govt Agencies, Offices for understanding the 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	Conduct comprehensive studies and engage with authorities to propose effective placemaking initiatives.	L4
CO2	Design and present approved placemaking projects, including estimates and BOQs.	L5
CO3	Develop rural habitat plans by collecting and analyzing primary and secondary data in line with RADPFI guidelines.	L5
CO4	Create district development plans through regional planning exercises, incorporating sustainable growth strategies.	L6
CO5	Apply planning techniques and statistical tools to evaluate and propose comprehensive regional development strategies.	L4

Program Outcome of M. Plan (TCP) 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

Mapping of COs and POs:

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

✔ -High Impact

INFRASTRUCTURE PLANNING			
Course Code	**MTCP202**	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	3	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

Introduction to different city infrastructures

Physical & social infrastructures and city system overlay. Planning for Urban Infrastructure, Role of Planner in the provision of urban networks and services.

Water Supply

Sources of water, treatment and storage, transportation and distribution, quality and quantity requirements, network mapping, distribution losses, water harvesting, recycling and reuse, norms and standards of provision and factors affecting water demand, institutional arrangements, planning provisions, and management issues. Sensor-based Leak detection and other innovative methods of urban water supply system practices. Principles of design of water supply in buildings/House service connection. Various Water-related programs, schemes, and policies.

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

Module-2

Sanitation and Sewerage Systems

General principles, sewage disposal, and treatment methods, wastewater characteristics, greywater disposal, DEWATS, industrial pollutants, open defecation, innovative disposal approaches, low-cost sanitation technologies

Storm Water Management

Collection and disposal, norms and standards, institutional arrangements, planning provisions, and management issues, drainage networks and their mapping, estimations of sewer generation, and network requirements.

Municipal and Solid Waste Management

Elements of solid waste management - classification and characteristics, generation points, collection, storage, transportation, disposal methods, processing, treatment, and landfilling, recycling and reuse, wealth from waste, norms, and standards.

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

Module-3	
Electricity - Sources of electricity, distribution networks, Power demand assessment, norms and standards. **Renewable Energy -** Management of solar energy, wind energy, tidal energy, biomass energy, and energy from waste. **Fire & Fire services -** fire hazards, vulnerable locations, methods of firefighting, norms, and standards, planning provisions. Energy Management, energy requirement and non-conventional energy systems.	
Teaching-Learning Process	***Blended learning:*** *Power point presentation to elaborate more on key topics.*
Module-4	
Social infrastructure Various typologies, including education, health, and civic facilities, hierarchical distribution of facilities, access to facilities, provision and location criteria, norms, and standards with a focus on planning norms and space standards for education, health, recreation, and socio-cultural facilities, e-education and telehealth services, amenities for urban and rural settlements, significance of education and health infrastructure in planning, locating education and health facilities, and techniques for analysis such as scalograms.	
Teaching-Learning Process	***Blended learning:*** *Power point presentation to elaborate more on key topics.*
Module-5	
Policies, Programmes, and Projects Understanding prevalent policies, projects, and missions - JnNURM, AMRUT, HRIDAY, Smart Cities Mission, etc. Infrastructure Programmes and policies by MOUD, PPP (DBOOT, BOOT, etc.) Norms and standards for different types of infrastructure; Nature and content of infrastructure in development plans at different geographical levels and Feasibility assessment of infrastructure requirements in plans.	
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. Ben Green, 2019, *The Smart Enough City: Putting Technology in Its Place to Reclaim Our Urban Future*, MIT Press.
2. Jose, Esteban,je Castro, *water & Sanitation Services*
3. Vivek Date, Bhuma Sundararaman, *Road Infrastructure: Issues and Implications.*
4. Y Chandara Sekhar, *Urban Infrastructure an Introduction*
5. Sudha Menon, Pheba Anandan Pillai, *Watershed Management : Concepts and Experiences*
6. Austin Gary , 2014, *Green Infrastructure for Landscape Planning*, Taylor and Francis
7. Doloi Hemanta , 2019, *Planning, Housing and Infrastructure for Smart Villages*, Taylor and Francis

Web links and Video Lectures (e-Resources):

VTU online MOOC Course

- https://online.vtu.ac.in/course-details/urban-utilities-planning-water-supply-sanitation-and-drainage-258366
- https://online.vtu.ac.in/course-details/Integrated-Waste-Management-For-A-Smart-City

Skill Development Activities Suggested

- Guest Lectures.
- Seminars/ Webinars
- Site Visits to Utility Service providers/ agencies to understand the operations and management of the City's utilities

Course Outcome (Course Skill Set)

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

Sl. No.	Description	Blooms Level
CO1	Analyze and propose comprehensive urban infrastructure solutions integrating physical and social aspects.	L4
CO2	Evaluate water supply systems, including treatment, distribution, and innovative practices like sensor-based leak detection.	L5
CO3	Assess sanitation and sewerage systems, applying principles of disposal, treatment methods, and innovative technologies.	L5
CO4	Design stormwater management strategies, considering collection, disposal, and planning provisions for drainage networks.	L4
CO5	Develop strategies for solid waste and municipal waste management, emphasizing classification, recycling, and adherence to norms.	L5

Program Outcome of M. Plan (TCP) 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

Mapping of COs and POs:

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

✔ - High Impact

PROJECT APPRAISAL AND DPR			
Course Code	**MTCP203**	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	2	Exam Hours	03

Course Learning objectives:
By taking this course Students will be able to:

- Understand the structure and significance of DPR in various types of projects
- Undertake a study and prepare a detailed DPR for a project

Module 1

Introduction to Detailed Project Report

Definition of DPR and Appraisal, need and importance of DPR and Appraisal in urban Planning, content in DPR – step by step process, Project Background, Feasibility study approach – (Pre-implementation stage, implementation stage, and post-implementation stage, types of surveys to be carried out for DPR, team mobilization for DPR making.

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

Project Implementation and Appraisal

Project Implementation- stages, techniques, stakeholders, monitoring, reporting, milestones.

Project Appraisal- formulation, needs, objectives, stages, Network analysis (CPM, PERT), resource levelling, cost analysis, Techno-economic analysis.

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

Financial Planning and Management

Financial section of DPR - Fundamentals of audit, costing, and budgeting of urban planning related projects. Processes involved in financial planning, including the preparation and analysis of budgets, cost estimation, and financial audits. The role of stakeholder contributions in project financing and management, and strategies for managing emergency risk funds.

Evaluating Project Performance and ROI

Methods and tools for project appraisal and performance evaluation. Calculation of Return on Investment (ROI), Case studies on assessing project viability, and measuring the economic and social impacts of urban projects.

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

DPR for a Utility project for a neighbourhood/precinct

A case study of a neighbourhood to prepare a step-by-step detailed project report for electricity, water supply and conservation including water treatment plant, rainwater harvesting, Sanitation. Solid Waste Management and policy frameworks using GIS

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

DPR for Industrial townships/Large-scale Infrastructure Project

A case study on an existing planned industrial township or a large-scale infrastructure project, single sector vs mixed industries, Industrial corridor projects, the role of NITI Ayog, Demographic studies, Incentives, etc., the role of GIS

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.*

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. Harry F. Campbell, Richard P.C. Brown, 2015, *Cost-Benefit Analysis* , Taylor and Francis eBooks
2. Nancy L. Clark, William H. Worger, 2023, *Voices of Sharpeville* , Taylor and Francis eBooks
3. Garg RK, *Handbook on Project Reports Concepts, Preparation Analysis and Financing,* Bharat Law House Pvt. Ltd., 2011
4. Odisha Water Supply and Sewerage Board, 2016, *DPR on Design, Construction, Operation, and Maintenance of Sewage Treatment System*.
5. *DULT, 2016, Better Access to Majestic Area.*
6. Ministry of Commerce and Industry, 2019, *Progress report of Japan Industrial Townships (JIT) in India*.

Skill Development Activities Suggested

- Case Study
- Data Collection
- Site Visits

Course outcome (Course Skill Set)

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

Sl. No.	Description	Blooms Level
CO1	Develop detailed project reports (DPR) integrating feasibility studies and survey techniques.	L4
CO2	Implement effective project management techniques for urban projects.	L4
CO3	Appraise urban projects using network analysis and techno-economic evaluation methods.	L5
CO4	Apply financial planning fundamentals to urban planning projects, including budgeting and stakeholder financing strategies.	L4
CO5	Evaluate project performance and impacts using ROI analysis and case studies.	L5

Program Outcome of M. Plan (TCP) 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

Mapping of COs and POs:

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

✔ - High Impact

TRAFFIC & TRANSPORT PLANNING			
Course Code	**MTCP204**	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	3	Exam Hours	03

Course Learning objectives:

By taking this course Students will be able to:

- Understand the comprehensive Transport Planning including- systems, road hierarchy and classifications.
- Distinguish and undertake the different types of transport and traffic studies for trip generation, O-D surveys, Volume, Intersection designs etc.
- Apply analytical skills in designing the multi-modal systems, and mass public transportation systems such as BRTS, MRTS, LRT.
- Successfully apply the current trends and technologies in making the transportation systems Smart, in the evolving urban scenario.

Module-1

Transportation Systems

Role of transport, types of transport systems, the evolution of transport modes, transport problems, mobility issues, Urban Form, Transport patterns, land use – transport cycle, the concept of accessibility. Hierarchy, capacity, and geometric design elements of roads and intersections, Basic principles of Transport infrastructure design. Urban Road Classification-Road characteristics– alignment and sight distance.

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

Urban Transport Planning Studies

Transportation surveys and studies, traffic and travel characteristics, Urban transport planning process – stages, study area, zoning, database, the concept of trip generation and distribution. Traffic surveys – Speed, Volume, Intersection Design– Rotary and Signalling system, Design of Urban Roads about different types of traffic, segregation of traffic, canalization. Parking needs, on and off-street parking, estimation of short-term and long-term parking demand, and planning including the planning of terminals. Planning, engineering, and management criteria for road junctions.

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	
Traffic Management and Environment Traffic management, principles, methods, Traffic operation plan, scope, and objective. Non-Motorized Transportation, Transport and Environment**:** Detrimental effects of traffic on human life, traffic noise, noise abatement measures. Green corridors. Analytical Transport Planning**:** The quantitative transport planning process, surveys, zoning, and network building. Trip Generation, Trip Distribution, Modal Split. Transport model, prediction of future use of transportation systems, transport policy, and evaluation.	
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	
Transport Systems Role and level of Intermediate Transport mode (IPT), Public transport and private mode in Indian Scenario, Types of Public Mass transport: Mass Rapid Transit System (MRTS), BRTS, LRT, RRTS and its role in the transport system. Land-use transport Cycle, Transit-Oriented Development, Multi-Modal Transport systems, and emerging Transport systems.	
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	
Traffic Safety Growth of Traffic, Causes and Prevention of Road accidents, Accident patterns, PIEV Theory, Street lighting design to enhance safety and other factors contributing to road safety. **Smart Transport Planning** Introduction to smart transport, Intelligent transportation system (ITS), GIS and GPS positioning Navigation and Identification system, Smart Automobiles and sustainable fuels, smart pedestrian walkways and cycle tracks, solar roads, electronic fee payment technology, electronic speed determination technology, smart signalling technology.	
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.*
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. Kadiyali, L.R, *Traffic Engineering and Transport Planning*
2. Khanna S K. and CEG Justo, 1987, *Highway Engineering*, Nemichand and Bros., Roorkee.
3. C S Papacostas, P C Prevdeouros, *Transportation Engineering & Planning*
4. Kurauchi Fumitaka, 2017, *Public Transport Planning with Smart Card Data*, Taylor and Francis
5. Mashrur A, 2003, Fundamentals Of Intelligent Transportation Systems Planning America Artech House Publishers

Web links and Video Lectures (e-Resources):

- VTU Online MOOC Course
  https://online.vtu.ac.in/course-details/urban-landuse-and-transportation-planning
- https://youtube.com/playlist?list=PLq46p_ppqQekCIyRgx2bmBU7W78U1nk_2&si=EUDXotu5RE2BPfzE

Skill Development Activities Suggested

- Case Studies
- Guest Lectures
- Site visits to transportation agencies in the Government & Private Organisations

Course outcome (Course Skill Set)

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

Sl. No.	Description	Blooms Level
CO1	Analyze and apply principles of urban road design and traffic management.	L4
CO2	Conduct comprehensive transportation surveys and studies to assess urban mobility patterns.	L4
CO3	Evaluate and recommend traffic management strategies to enhance urban transport efficiency.	L5
CO4	Design integrated transport systems incorporating public and intermediate transport modes.	L4
CO5	Develop smart transport solutions using ITS, GIS, and sustainable technologies.	L5

Program Outcome of M. Plan (TCP) 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

Mapping of COs and POs:

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

✔ - High Impact

HOUSING AND LEGAL FRAMEWORK			
Course Code	**MTCP205**	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	3	Exam Hours	03

Course Learning objectives:

By taking this course Students will be able to:

- Understand housing as a commodity, with different types of housing systems, demand and supply.
- Understand the complexities of housing in Cities and social problems in unorganised settlements (slums, group housing, density-based development)
- Distinguish the different Policies, Acts and legislations concerning Housing in India

Module 1

Concepts and Definitions

Shelter as a basic requirement, determinants of housing form, Census of India definitions, Introduction to policies, housing need, demand and supply, dilapidation, structural conditions, materials of constructions, housing age, occupancy rate, crowding, housing shortage, income, and affordability, poverty, and slums, houseless population. Housing as a constitutional right.

Various housing typologies viz. traditional houses, plotted development, group housing, multi-storied housing, villas, chawls, etc., slums and squatters, night shelters, public health issues related to housing, various theories of housing, the concept of green housing, green rating of housing projects.

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

Housing Market

Definitions and concepts of Housing demand, supply, and need or deficit. Ability to pay, economic character of the society, employment, Families and households and their characteristics, problems of age, regional differences, family income, mobility, migration, standards of living, the social structure of cities, etc. The local character of the market, quality of housing, filtering concept, the land ingredient, taxes, market indexes, etc. Conceptual framework of demand, supply, need or deficit and market, creation of a global set of key housing indicators, etc.

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

Housing for EWS

Housing needs and challenges faced by Economically Weaker Sections (EWS). Demographic analysis, socioeconomic factors, and spatial distribution of EWS populations in urban areas. Housing demand, key barriers to housing access, and strategies to address any challenges.

Importance of community participation in housing projects for EWS, participatory planning processes, and capacity-building programs.

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

Policy, Acts, and Laws.

National and state-level housing policies, with an emphasis on housing as a Sustainable Development Goal (SDG).Objectives, strategies, and impacts of these policies on ensuring housing for all

Laws and acts related to housing(Effect of the Urban Land (Ceiling & Regulation) Act. 1976. Rent Control Act on housing, Slum clearance Act 1956, rehabilitation and resettlement act 2013), focusing on their historical context, implementation, and effectiveness. Slum clearance, urban redevelopment, and legal measures aimed at improving housing conditions for different socioeconomic groups

Government schemes designed to provide housing for Economically Weaker Sections (EWS). Initiatives like Pradhan Mantri Awas Yojana (PMAY), Rajiv Awas Yojana (RAY), National Urban Livelihoods Mission (NULM), etc. their design, implementation, outcomes, and the role of various stakeholders

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

Housing Laws concerning Housing Policies

Housing and Urban Policies in India. Fiscal Outlays in Five-Year Plans (1951-56 to 2017-2022). National Building Organization (NBO) and Town & Country Planning Organization (TCPO). Building Materials and Technology Promotion Council (BMTPC). National housing and habitat policy 1998. Model bylaws for cooperative societies and apartments. KHB, BDA, CIDCO, etc. The legal status of women and children in housing. Environmental impact assessment of housing development. Housing Schemes in Smart City Development. Case studies of sustainable practices and replicable models related to housing projects and policies.

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.*

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. Saba Nizami, *Rehabilitations of Slums in Urban Areas: Challenges and Experience*
2. T R Venkatesh, *Housing Sector and the Economy : Global Experience*
3. V Balaji, T P Rajmanihar, *Housing Sector in India - Issues, Opportunities and Challenge*
4. Somerville Peter, Sprigings Nigel, 2005, *Housing and Social Policy*, Knimbus Open eBooks
5. *Evidence and Innovation in Housing Law and Policy* Cambridge University Press

Web links and Video Lectures (e-Resources):

- VTU online MOOC Course - *https://online.vtu.ac.in/course-details/housing-policy-planning*
- *https://youtube.com/playlist?list=PLxHgc0UFNU4vTrP0gJ97ns_95C1GGKdfw&si=cO_QJ9M18BkngmHx*

Skill Development Activities Suggested

- Case studies
- Guest lectures
- Site Visits to Housing board projects/ offices

Course outcome (Course Skill Set)

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

Sl. No.	Description	Blooms Level
CO1	Analyze housing market dynamics, including affordability and supply-demand factors.	L4
CO2	Evaluate the impact of housing policies and legal frameworks on urban development. (L4	L4
CO3	Develop strategies for addressing housing needs of Economically Weaker Sections (EWS) through participatory planning.	L5
CO4	Assess the effectiveness of government housing schemes in urban areas.	L4
CO5	Examine sustainable housing practices and their legal implications in urban planning.	L4

Program Outcome of M. Plan (TCP) 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

Mapping of COs and POs:

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

✔ - High Impact

LEGISLATION AND GOVERNANCE			
Course Code	**MTCP206**	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	3	Exam Hours	03

Course Learning objectives:

By taking this course Students will be able to:

- Understand the legislation, ordinance, bills, rules and regulations.
- Explain the provisions of Karnataka Town Country Planning Act, 1961 and Other Acts and Legislations pertaining to Urban Planning and Development
- Appreciate the principles of good governance and management of urban local bodies through transparent development policies including roles of stakeholders.
- Evaluate the governance through the emerging trends of implementation of ICT and e-Governance in the operations of the ULBs.

Module-1

Concept of Legislation

Law, source of Law (Constitution, custom, legislation & precedent – case law), the meaning of norms of Law, legislation, ordinance bill, Act, President's consent, Regulations, and By-laws, etc. Significance of law and its relationship to Urban Planning, Statutory basis for planning. Urban & Rural relationship in planning. Indian Constitution concepts and contents, provision regarding property rights, legislative competence of state and central governments to enact town planning legislation.

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

Legislations on Urbanisation

Karnataka Town & Country Planning Act 1961; Karnataka Urban Development Authority Act, Karnataka Municipal Corporations Act; Karnataka Land Requisition Act; BDA Act; BMRDA Act,

Institutional frame and mechanism for governance as envisaged in the 74th CAA. Process of decision making in the process, further implementation and execution, and management process.

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

Overview of Governance

Definition, concepts, components, government and governance, hierarchy and structure, forms of governance, and the process of inclusion and exclusion. Concept of Good Urban Governance and Reforms, Resource Mobilization, Transparency, and Better Municipal Management.

Functions and powers of elected councils, Multi-level Governance, Statutory bodies of Governance. Top to Bottom and Bottom to Top approach of governance

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

Participatory Governance

System, structure, functions, powers, process and resource, performance, interface with NGOs, and other agencies. Stakeholders' participation, roles, and responsibilities, and access to government by various stakeholders. Arnstein's Ladder of participation, Case studies of successful Participation.

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

Smart Governance

Introduction to smart governance, including Government to government, Government to the citizen, and Government to business models. E-governance for citizen services, Smart E-governance within Government agencies, Smart E-governance for industries and commerce, Emerging Trends in Smart Governance, Implementation Models for E-Governance, and Regulatory Guidelines for E-Governance. Various Initiatives and Implementation of Smart Governance.

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.*

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. M Lakshmikanth, *Governance in India*
2. Rajiv Mishra, *India 2020*
3. Sowmya Narayanan, Sadagopan, *E-Governance Today*
4. *The Karnataka Municipal Corporations ACT*
5. *Karnataka Municipalities ACT 1965*
6. *The Karnataka Town and Country Planning ACT 1961*
7. *The Karnataka Urban Development Authorities ACT 1987*
8. Piyush Gupta, R K Bagga, Sridevi Ayaluri, *Fostering E-Governance: Compendium of Selected*

Web links and Video Lectures (e-Resources):

- VTU Online MOOC Course

https://online.vtu.ac.in/course-details/urban-governance-and-development-management-ugdm

- *https://youtu.be/pdPEG-n1ns0?si=IqZZRJNYHn94RQIl*

Skill Development Activities Suggested

- Case studies
- Guest lectures
- Site Visits

Course outcome (Course Skill Set)

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

Sl. No.	Description	Blooms Level
CO1	Analyze statutory and constitutional provisions influencing urban planning in India.	L4
CO2	Evaluate key urban planning legislations such as the Karnataka Town & Country Planning Act and Municipal Acts.	L4
CO3	Develop strategies to enhance urban governance through transparency, resource mobilization, and participatory decision-making.	L5
CO4	Assess the impact of participatory governance in urban development using frameworks like Arnstein's Ladder.	L4
CO5	Critically analyze the implementation and outcomes of smart governance initiatives in urban contexts.	L4

Program Outcome of M. Plan (TCP) 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

Mapping of COs and POs:

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

✔ - High Impact

ENVIRONMENTAL PLANNING			
Course Code	**MTCP207**	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	3	Exam Hours	03

Course Learning objectives:

By taking this course Students will be able to:

- Understand the significance of Environment and the impact of Urban projects on Environment.
- Elucidate the different concepts of sustainable environmental development, SDGs, National & International Policies.
- Understand the concept and steps involved in Environmental Planning, Stages, Process, Impact Assessment.

Module-1

Introduction

Fundamentals of Ecosystem and Environment, Components of Natural and Built Environment- Man's impact on natural features viz. Atmosphere (climate), -Urban Heat Island; Forests and Landforms. Environmental pollution–types of pollution, air; water; noise, and land–Their source, impact, and abatement. Impact of various human activities on the environment including recreation, tourism, urban waste, and impact on the environment

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

Global Environmental Concerns

UN/ International Conferences/ Conventions regarding environmental protection and conservation like Stockholm Conference (1972), Rio Earth Summit (1992), Kyoto Protocol (1997), Paris Agreement (2015) etc.

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

Indian Legislation related to environment

Formation of the Ministry of Environment, Forest and Climate Change, India's National Environment Policy in 2006, Commitment to reducing emissions intensity and increasing renewable energy capacity under its Nationally Determined Contributions (NDCs), Various movements, methods, and role of NGOs towards environmental protection

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	
Environmental Impact Assessment (EIA) and environmental planning Principles and methodologies of Environmental Impact Assessment (EIA), Acts, Regulations, and the role of institutions in ensuring effective environmental management. Criteria guiding EIA. Need for Environmental Planning, environmental planning techniques, including methods of data collection, interview techniques, and database utilization for incorporating environmental concerns in planning. Conservation planning: Resource protection and conservation techniques.	
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	
Emerging Concepts Emerging Concepts: smart growth, clustered cities, ecological footprints, green development, sustainable cities and inclusive cities for sustainable livelihood; Environment and poverty links; Environment and Economy interaction: Kuznets curve, Green GDP, Carbon Trading, carbon sequencing, environmental accounting, and Green Budgeting.	
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.*

Assessment Details (both CIE and SEE)

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Continuous Internal Evaluation:

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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. Anil Varma, *Tourism Growth : Impact and Experiences*
2. Subir Ghosh, *Rural Tourism*
3. Prabha Shastri Ranade, *Ecotourism : Perspectives and Experience*
4. Prabha Shastri Ranade, *Climate Change: Impact and Mitigation*
5. Beniamino Murgante, Giuseppe Borruso, Alessandra Lapucci**,** *Geocomputation, Sustainability and Environmental Planning***,** Springer
6. Appiah-Opoku Seth, 2012, *Environmental Land Use Planning***,** Knimbus Open eBooks

Web links and Video Lectures (e-Resources):

- VTU Online MOOC Course
  https://online.vtu.ac.in/course-details/Environment-And-Development
- https://youtube.com/playlist?list=PLLy_2iUCG87CkrNdXME16BCptwGx1fl67&si=i0rHAhRL1ydeJeqd

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 human impacts on environments and strategies for mitigation.	L4
CO2	Evaluate global environmental concerns from international agreements.	L4
CO3	Apply Environmental Impact Assessment (EIA) principles for effective development management.	L4
CO4	Develop strategies integrating environmental aspects into urban planning.	L5
CO5	Examine the relationship between environment, economy, and society.	L4

Program Outcome of M. Plan (TCP) 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
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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
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Mapping of COs and POs:

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

✔ - High Impact