



**Subject:** Elements of City Planning - METTC11508

**Type of course:** Minor stream

**Prerequisite:** NIL

**Rationale:** The Elements of City Planning are fundamental in creating functional, sustainable, and livable urban environments. These elements include land use planning, transportation networks, infrastructure development, environmental sustainability, and community amenities. Effective city planning ensures the efficient allocation of space for residential, commercial, industrial, and recreational purposes, balancing growth with environmental conservation. It also involves the integration of public transportation systems, enhancing accessibility and reducing congestion. Infrastructure planning addresses the provision of essential services like water, electricity, and waste management. Additionally, city planning considers the aesthetic and cultural aspects of urban spaces, fostering a sense of place and community. Ultimately, these elements work together to create cities that are economically vibrant, socially inclusive, and environmentally resilient.

#### Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks					Total Marks
CI	T	P		C	Theory Marks		Practical Marks		
			ESE		MSE	V	P	ALA	
04	00	02	5	60	30	10	20	30	150

*Legends: CI-Class Room Instructions; T – Tutorial; P - Practical; C – Credit; ESE - End Semester Examination; MSE- Mid Semester Examination; V – Viva; CA - Continuous Assessment; ALA- Active Learning Activities.*

#### Continuous Assessment:

Sr. No	Active Learning Activities	Marks
1	<b>Water Supply system</b> Students will design the water supply system in given existing city/town in group and upload on GMIU Web Portal.	10
2	<b>Sanitation Design</b> Student will prepare the lay out of drainage of city/town house hold. And	10



	upload on GMIU Web Portal.	
3	<b>Electric Planning</b> Students analyze existing electricity networks within a city and propose improvements to reduce power losses, increase efficiency, or promote sustainable electricity options like renewable sources. They present their proposals using maps and data and upload on GMIU Web Portal.	10
<b>Total</b>		<b>30</b>

**Course Content:**

Sr. No	Course content	Hrs	% Weightage
1	<b>Understanding Cities</b> Introduction to Cities as a functional system. The overlay of different infrastructures- physical & social infrastructures. <b>Planning for Urban Infrastructure</b> Urban Infrastructure, Role of Planner in the provision of urban networks and services, feasibility studies for infrastructure projects, planning for major infrastructure projects, Various Infrastructure Programmes and policies by MOUD, PPP (DBOOT, BOOT, etc.) in infrastructure projects	12	20
2	<b>Water Supply</b> Water– sources of water, treatment and storage, transportation and distribution, quality, networks, distribution losses, water harvesting, recycling and reuse, norms and standards of provision, institutional arrangements, planning provisions, and management issues. Network design, Economics, distribution networks, Computer applications – Appurtenances –sensor-based Leak detection. Principles of design of water supply in buildings – House service connection.	14	25
3	<b>Sanitation and Solid waste</b> Sanitation – points of generation, collection, treatment, disposal, norms and standards, grey water disposal, DEWATS, institutional arrangements, planning provisions, and management issues. Storm water collection and disposal, norms and standards, institutional arrangements, planning provisions, and management issues. Municipal and other wastes –generation, typology, quantity, collection, storage, transportation, treatment, disposal, recycling and reuse, wealth from waste, norms, and standards, institutional arrangements, planning provisions, and management issues. Approach to the special category of Solid Waste i.e., E-Waste, Building & Debris Waste, Medical Waste, Food Waste, Garden Waste, etc, Scientific Landfill and reclamation of existing dump yard, Critical examinations of SWM endeavour with special emphasis on clean city rankings along with case study on solid	14	25



	waste management.		
4	<b>Electricity &amp; Fire services and Renewable Energy</b> Electricity – Sources of electricity, distribution networks, demand assessment, norms and standards, planning provisions, and management issues. Fire –fire hazards, vulnerable locations, methods of firefighting, norms, and standards, planning provisions, and management issues. Energy Management, energy requirement, non-conventional energy systems, management of solar energy, wind energy, tidal energy, biomass energy, energy from waste.	10	15
5	<b>Social Infrastructure – Education, Health, Civic</b> Social Infrastructure – Education, Health, Civic Types, hierarchical distribution of facilities, Access to facilities, provision and location criteria, Norms and standards, etc. provisions for e- education, Tele- Health	10	15
	<b>Total</b>	<b>60</b>	<b>100</b>

**Suggested Specification table with Marks (Theory): 60**

Distribution of Theory Marks (Revised Bloom's Taxonomy)						
Level	Remembrance (R)	Understanding (U)	Application (A)	Analyze (N)	Evaluate (E)	Create (C)
Weightage	20%	30%	30%	10%	10%	NA

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

**Course Outcome:**

After learning the course, the students should be able to:	
CO1	Have a complete understanding of Utilities provision and management in a city
CO2	Understand the operational complexities of a city's utility services
CO3	Evaluate the Utility Management Plan of any City
CO4	Evaluate the new technologies and emerging practices in Utility Management
CO5	Understand the implementation of the different scopes of Infrastructure and Public projects

**List of Assignment**

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Assignment and tutorial base on above mention topic.

**Instructional Method:**

The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, may also use any of the tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.

From the content 10% topics are suggested for flipped mode instruction.

Students will use supplementary resources such as online videos, NPTEL/SWAYAM videos, e-courses, Virtual Laboratory

The internal evaluation will be done on the basis of Active Learning Assignment

Practical/Viva examination will be conducted at the end of semester for evaluation of performance of students in laboratory.

**Web links and Video Lectures (e-Resources):**

1. Congress for New Urbanism:  
<https://www.youtube.com/user/Congress4NewUrbanism>
2. Not Just Bikes:  
<https://www.youtube.com/c/NotJustBikes>

**Reference Books:**

- [1] Sameer Kochhar, et.al., 2008, Infrastructure and Governance, Academic Foundation, New Delhi.
- [2] The Smart Enough City: Putting Technology in Its Place to Reclaim Our Urban Future, Ben Green, 2019, MIT Press.
- [3] Managing urban water supply, Gathe Donald E Billings, et.al., 2009, Dordrecht, Kulwer, Academic Press.

