

**M.E.(Civil) (Infrastructure Engineering) Semester: I**

**Subject Name: Urban Infrastructure Planning And Management**

**Subject code : MECV103**

**A. Learning objectives:**

The objective of this course is

- To making concepts related Urban Infrastructure Planning & Management which involves Planning and management of project with economic development& prosperity.
- It will deal briefly with the question of how to initiate more effective and responsive to urban planning revisiting the conditions indispensable to its implementation.
- To providing a framework and a set of regulations for urban development is highlighted through the examination of objectives, principals and tools of Urban Planning.
- To recalling the basic principles on which it is based in the context of urban spatial, economic and social issues.
- To create the student's ability to articulate between urban development and infrastructure provision.
- To give an experience in the implementation of engineering concepts which are applied in field of Infrastructure Engineering.

**B. Teaching Scheme (Credits and Hours)**

Teaching Scheme				Credit Scheme			Evaluation Scheme				
Lect Hrs	Tu Hrs	Prac. Hrs	Total	Theory	Pra/TW	Total	UE	IE	CIA	Prac/Viva	Total
04	02	00	06	04	01	05	70	30	20	30	150

**C. Detailed Syllabus**

<b>Unit No.</b>	<b>Topics</b>
1	<b>Urban infrastructure:</b> Types, significance, impact on urban form, norms and financial aspects.
2	<b>Networks and services systems:</b> Urban services overview, classification and significance. Concepts and theories for design and operation, components, interrelationship, requirements of appropriate technology, cost recovery, Gap analysis.
3	<b>Water supply:</b> Water Supply: Source, treatment and plant location, pipe network And distribution, location of distribution station, Norms.
4	<b>Sewerage system:</b> House hold collection, pipe network, location of sewerage pumping station, treatment plant and location, disposal site, Norms. Sewerage drainage, refuse collection, storage, recycling and disposal, minimum basic needs, formulation of objectives, norms and standards both for space allocation and quality control, Storm water Network.
5	<b>Solid waste management:</b> Types, Generation, collection system, transfer station location, Segregation, transportation, disposal, and site selection, Effect of population density, Impact of Urban land use, Bio-medical waste and disposal.
6	<b>Electricity &amp; communication network:</b> Location, transformer, station, street lighting requirements, telecommunication network requirement.
7	<b>Social infrastructure:</b> Health and Education hierarchy, norms and location. Energy distribution, fire protection requirements, milk distribution system.

**D. Lesson Planning:**

<b>Unit No</b>	<b>Topics</b>	<b>Hours</b>	<b>Weightage</b>
1	Urban infrastructure	7	10%
2	Networks and services systems	8	15%
3	Water supply	8	15%
4	Sewerage system	12	20%
5	Solid waste management	12	20%
6	Electricity & communication network	8	10%
7	Social infrastructure	5	10%

**E. List of Tutorials:**

<b>Sr. No.</b>	<b>Tutorial Content</b>
<b>1</b>	Tutorial based on above mentioned course
<b>2</b>	<b>Field work:</b> Collection of data. Presentation with group discussion on its analysis and interpretations.
<b>3</b>	<b>Field Visit:</b> Visit to urban planning projects, Offices.

**F. Instructional Method and Pedagogy** (Continuous Internal Assessment (CIA) Scheme)

- Two Faculties will be covering the syllabus in branch for 4 hours in a week. In Tutorial, class must be divided into one class & faculties will be solving or assigning the problem of the subject in each class.
- Attendance is compulsory in lectures and Tutorial which carries 05 Marks.
- At regular intervals assignments is given to all students which carries 30 marks. Evaluation of these assignments will be observed under Daily Homework Daily Assessment (DHDA) System.
- Classroom participation and involvement in solving the problems in Tutorial rooms carries 05 Marks.
- Viva Voce will be conducted at the end of the semester of 10 Marks.
- One internal exam of 30 marks is conducted as a part of internal theory evaluation.

**G. Students Learning Outcomes:**

At the end of the course

- Adopting scientific principles of infrastructure planning and management, Quality Management, cost and time control when students employed in practice.
- The students will be able to think logically for development of Infrastructure in field of Urban Infrastructure Planning and Management.
- Ensuring inter-disciplinary co-ordination during Planning and management.
- The students will gain an experience and knowledge in the implementation of Infrastructure Engineering on engineering concepts which are applied in field Urban Infrastructural Planning.

**H. Text Books & Reference Books:**

- 1 FAIR, G.M., GAYER, J.C. AND OKUN, D.A., “Elements of water supply and Waste water Disposal”, John Wiley & Sons, New York.
- 2 T.M. VINODKUMAR, “Networks and services”, ITPI Reading Manuals.
- 3 TCPO AND MINISTRY OF WORKS AND HOUSING, “Norms and Standards for Urban Water Supply and Sewerage Services”, New Delhi.