

***Kadi Sarva Vishwavidyalaya, Gandhinagar***  
**M.E. (Civil Infrastructure Engineering) Semester: I**  
**(w.e.f. Academic Year 2017-18)**

**Subject Name: Infrastructure Planning and Management**

**Subject code: MECV103-N**

**A. Learning objectives:**

The objective of this course is

- To have an overall knowledge of the Infrastructure planning .Infrastructure Organizations & Systems.
- Introduction to project management processes - Initiating, Planning, Executing, Controlling, and Closing processes.

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

Teaching Scheme				Credit Scheme			Evaluation Scheme				
Lect (Hrs)	Tu (Hrs)	Prac. (Hrs)	Total (Hrs)	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**

**1 Infrastructure**

Definitions of infrastructure, Governing Features, Historical overview of Infrastructure development in India for Power Sector , Water Supply and Sanitation Sector Infrastructure Organizations & Systems, Road, Rail, Air and Port Transportation Sectors, Telecommunications Sector, Urban Infrastructure in India, the Rural Infrastructure. Introduction to Special Economic Zones.

**2 Infrastructure Planning**

Typical infrastructure planning steps, Planning and appraisal of major infrastructure projects, Screening of project ideas, Life cycle analysis, Multi-criteria analysis for comparison of infrastructure alternatives, Procurement strategies, Scheduling and management of planning activities, Infrastructure Project Budgeting and Funding, Regulatory Framework, Sources of Funding.

**3 Contracts ,Management & arbitration**

Engineering contracts and its formulation, Definition and essentials of a contract, Indian Contract Act 1872, types of contracts and clauses for contracts, Preparation of tender documents, Issues related to tendering process, Awarding contract & arbitration.

**4 Project Management in Construction**

Introduction to project management processes - Initiating, Planning, Database Management, Data need and analysis, Performance evaluation and failure Analysis. Executing, Controlling, and Closing processes; Project Integration Management - Project plan development, Project plan execution, and Overall change control; Project Scope Management - Initiation, Scope planning, Scope definition, Scope verification, and Scope change control.

**5 Private Involvement in Infrastructure**

A Historical Overview of Infrastructure Privatization. The Benefits of Infrastructure Privatization, Problems with Infrastructure Privatization, Challenges in Privatization of Water Supply: A Case Study, Challenges in Privatization of Power: Case Study, Privatization of Infrastructure in India: Case Study, Privatization of Road Transportation Infrastructure in India.

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**D. Lesson Planning:**

Unit No	Topics	Hours	Weightage (%)
1.	Infrastructure	9	15
2.	Infrastructure Planning	12	20
3.	Contracts, Management & arbitration	15	25
4.	Project Management in Construction	15	25
5.	Private Involvement in Infrastructure	9	15
<b>Total</b>		<b>60</b>	<b>100</b>

**E. List of Tutorials:**

1. Introduction to Infrastructure
2. Infrastructure Planning
3. Contracts, Management & arbitration
4. Project Management in Construction
5. Private Involvement in Infrastructure

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

- Attendance is compulsory in lectures which carries 05 Marks.
- At regular intervals assignments is given to all students which carries 10 marks. Evaluation of these assignments will be observed under Daily Homework Daily Assessment (DHDA) System.
- One internal exam of 30 marks is conducted as a part of internal theory evaluation.

**F. Students Learning Outcomes:**

At the end of the course

- The students will gain an experience in the implementation Historical overview of Infrastructure development in India.
- The students will get a diverse knowledge Infrastructure Planning and engineering practices applied to real life problems.
- The Students will learn to understand the theoretical and practical aspect of in project

**G. Text Books & Reference Books:**

1. PMI, A guide to the project management body of knowledge, 3rd ed., Project Management Institute, Pennsylvania, 1996.
2. A. S. Goodman and M. Hastak, Infrastructure planning handbook: Planning, engineering, and economics, McGraw-Hill, New York, 2006.
3. J. Parkin and D. Sharma, Infrastructure planning, Thomas Telford, London, 1999.
4. P. Chandra, Projects: Planning, analysis, selection, financing, implementation, and review, Tata McGraw-Hill, New Delhi, 2009.
5. J. D. Finnerty, Project financing - Asset-based financial engineering, John Wiley &

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Sons, New York, 1996.

6. L. Squire and H. G. van der Tak, Economic analysis of projects, John Hopkins University Press, London, 1975.
7. T. Hegazy, Computer-based construction project management, Prentice Hall, New Jersey, 2002.