

**Infrastructure Management**
**01CP0107**
**Objective of the Course:**

- Managing the policy process for infrastructure development.
- Strategizing the policy process for infrastructure development.
- Identifying Risks involved in infrastructure development and how to overcome it.

**Credit Earned: 3**
**Students learning outcomes:**

After successful completion of the course, it is expected that student will be able to,

1. Understand the basic concept of infrastructure management.
2. Get learning mode of development of projects.
3. Understand need for infrastructure planning and engineering.
4. Understand infrastructure organizations.

**Teaching and Examination Scheme**

Teaching Scheme (Hours)			Credits	Theory Marks			Tutorial/ Practical Marks		Total Marks
Theory	Tutorial	Practical		ESE (E)	CSE (I)	IA (M)	Viva (V)	Term Work (TW)	
03	00	00	03	50	30	20	25	25	150

**Detailed Syllabus**

Sr No.	Title of the unit	Number of hours
<b>1</b>	<b>Introduction to Infrastructure management</b>	<b>08</b>
	Need and Concept of infrastructure planning and engineering, expected performance and Scope for infrastructure management, Role of infrastructure in employment; Nature, Characteristics, Size and structure of Construction Industry, various agencies and sectors associated with infrastructure development in India, Infrastructure development scenario in India	
<b>2</b>	<b>Status and Overview of Indian Infrastructure</b>	<b>08</b>
	Overview of Status of Infrastructure: Urban infrastructure, Water, Dams, Bridges, Canals, Housing, Roads, Railways, Ports, Airports, Energy, Power; Status of Infrastructure in India: Assessment of infrastructure development related to civil engineering, Roads and buildings, Health and education,	

**Construction Project Management**

	water, Comparison of Indian infrastructure with world Energy Infrastructure, Transport Infrastructure, Urban Infrastructure, Rural Infrastructure.	
<b>3</b>	<b>Trends in Infrastructure development</b>	<b>06</b>
	Infrastructure development through Public Private Partnership (PPP), PPP-models for infrastructure projects, Ownership structures like BOT, BOOT, BOLT, DBFO etc.	
<b>4</b>	<b>Issues related to Infrastructure Development</b>	<b>08</b>
	Legal and Regulatory Issues, Issues related to funding and managing, Issues Moving Towards Low Carbon Economy: The Need for Renewable Energy Solutions role, responsibility of project management consultants, issues in PPP	
<b>5</b>	<b>Design Management and Risk in Project</b>	<b>08</b>
	Role of design, Understanding design, What design has to do, Role of Design Management, Managing the project triple constraints, Design Liability, Briefing and Interface control. Risk Concepts, Identification and Assessment, Risk Response Planning, Risk Tracking and Response; Role of Project Management in Risk Management	
<b>6</b>	<b>Indian government policies and Initiatives</b>	<b>04</b>
	Government's role in successful PPP, Policies related to various infrastructures, Business Models of the Future Commercial and urban infrastructure, transport, metro rail, social infrastructure	
	<b>Total</b>	<b>42</b>

**Suggested Theory Distribution**

The suggested theory distribution as per Bloom's taxonomy is as per follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery and evaluation					
Remember	Understand	Apply	Analyze	Evaluate	Create
15%	15%	20%	20%	20%	10%

**Instructional Method and Pedagogy:**

1. Use of Learning Management system like canvas
2. Demonstration through presentations on power point and videos and lectures
3. Brainstorming and group discussion sessions
4. Collaborative learning

**Recommended Study Material**
**Text Books:**

1. Raghuram G (2001) Infrastructure Development and Financing: Towards a Public Private Partnership, Macmillan Publishers, New Delhi.

**Construction Project Management****Reference Books:**

1. Joshi P (2001) Law Relating to Infrastructure Projects, Taxman Publishers New Delhi.  
Alagiri D (2007) Infrastructure Development, ICFAI University Press Hyderabad
2. India Infrastructure Reports, Infrastructure Development Finance Company

**Web resources:**

1. <https://www.nrcan.gc.ca/earth-sciences/.../resource-development-infrastructure>
2. [moud.gov.in/cms/urban-infrastructure.php](http://moud.gov.in/cms/urban-infrastructure.php)
3. <https://www.idfc.com/pdf/report>
4. [www.indiainfrastructure.com](http://www.indiainfrastructure.com)