

**Birla Institute of Technology & Science, Pilani**  
**Instruction Division**  
**Second Semester 2015-16**  
**Course Handout (Part II)**

**Date: 13.1.2016**

In addition to Part I (General Handout for all courses appended to the Time Table), this portion gives further specific details regarding the course.

**Course No. : CE G520**

**Course Title : Infrastructure Planning and Management**

**Instructors: A.K. SARKAR, Harish Puppala**

**Course Description:**

The course may be divided into three parts. The first part deals with infrastructure planning and includes the goal of planning; how to diagnose a problem and then to articulate goals; design of alternatives; plan testing; economic, financial and environmental evaluation; and implementation. Infrastructure management has been included in the second part and it includes framework; needs assessment and performance indicators; information management and decision support systems; and maintenance, rehabilitation and reconstruction policies. The third part deals with the planning of infrastructure in rural areas using accessibility criterion.

**Scope and Objective:**

The course intends to equip the students with sufficient technical knowledge of planning to enable them to confidently lead a multidisciplinary infrastructure planning team. The course also deals with all aspects of Civil Engineering infrastructures- how to procure and preserve it more efficiently and economically, leading to infrastructure management system (ISM).

**Text Books:**

- T1 Parkin James and Sharma Deepak; *Infrastructure Planning*; Thomas Telford, 1999.
- T2 Hudson W.R., Haas R and Uddin W; *Infrastructure Management*; McGraw-Hill, 1997.

**Reference Books:**

- Handouts will be distributed time to time.

**Course Plan:**

Lecture No.	Learning Objectives	Topics to be covered	Reference* Chap./Sec. # (Book)
1 to 2	Introduce the concept of infrastructure	Definition, importance, delivery, ownership.	Chapter 1/ T1
3 to 5	Goals of Planning	Why plan?, sustainable development, perspectives of	Chapter 2 and 3/ T1

		planning.	
6 to 9	Problem diagnosis and goal articulation	Political and technical perspectives, goal articulation	Chapter 4/T1
10 to 12	Forecasting and design of alternatives	Technical perspective, judgement and numerical techniques	Chapter 5/T1
13 to 14	Plan testing	Technical and political perspectives	Chapter 6/ T1
15 to 20	Economic and Financial and Environmental Evaluation	Pedigree, conceptual framework- CBA technique, social impact assessment techniques.	Chapter 7 and 8 and 9/ T1
21 to 22	Implementation	Delivery modes, public interest, corrupt practices, nepotism	Chapter 10/ T1
23 to 26	Framework for infrastructure Management	Key issues, application of systems methodology, Development of ISM, Life-cycle analysis	Chapter 2/T2
27 to 28	Need assessment and Performance indicators	Demand forecasting, needs assessment	Chapter 3/T2
29 to 31	Information management and decision support systems	IT, decision support system, database development and management, data needs, analysis techniques	Chapter 4/ T2
32 to 37	Maintenance, Rehabilitation and Reconstruction (M, R & R) strategies.	Definitions, maintainability, trade off, maintenance management, total quality management.	Chapter 11/ T2
38 to 42	Rural infrastructure planning	Sectors, integrated rural accessibility planning	Handout to be supplied

#### Evaluation Scheme:

EC No.	Evaluation Component	Duration	Weightage	Date, Time & Venue	Nature of Component
1	Mid-semester	90 min	30	15/3 4:00-5:30 PM	Open book examination
2	Comprehensive	3 hours	40	6/5 AN	Close book examination
3	Assignments/ Seminars		30		Home assignments, term papers. Presentations, Projects

**Chamber Consultation Hour: *To be announced in the class***

**Notices: *Watch Civil Engineering Department Notice Board***

#### Make-up Policy:

1. Make-up will be granted only on genuine reasons. However, prior permission is must.
2. For medical cases, a certificate from the concerned physician of the Medical Centre must be produced.

**Instructor-in-charge**