

GUJARAT TECHNOLOGICAL UNIVERSITY

CIVIL (WATER RESOURCES ENGINEERING) (33) INFRASTRUCTURE ENGINEERING AND MANAGEMENT

SUBJECT CODE: 2723307

SEMESTER: II

Type of course: Infrastructure and management

Prerequisite: Fundamental knowledge of infrastructural engineering, structural engineering and management.

Rationale: Students will be able to understand need of infrastructure assessment, various infrastructure systems like water, transportation, waste water etc.

Teaching and Examination Scheme:

Teaching Scheme			Credits C	Examination Marks						Total Marks
L	T	P		Theory Marks		Practical Marks				
			ESE (E)	PA (M)	PA (V)		PA (I)			
					ESE	OEP	PA	RP		
3	2#	2	5	70	30	20	10	10	10	150

Content:

Sr.No	Topics	Teaching Hrs.	Module Weightage
1.	Challenges of managing infrastructure	4	10
2	Life cycle analysis concept.	4	10
3	Infrastructures need assessment, Performance and Indicators.	4	10
4	Various Infrastructure Systems such as Transportation Services, Water and Wastewater Systems, Buildings and Structures, Energy Facilities	10	20
5	Database Management, Data Need and Data Analysis, Performance Evaluation Modelling and Failure Analysis	8	20
6	Maintenance Rehabilitation and Reconstruction Strategies, Dealing with New and Alternatives	8	20
7	Integrated infrastructure management systems, Infrastructure management system applications	4	10

Reference Books:-

1. Grig N.S., Infrastructure engineering and management, Wiley-Interseience, 1988
2. Hudson W.R., Haas R., Uddin W., Infrastructure Management, McGraw-Hill, 1997

Course Outcome:

After learning the course the students should be able to: Various types of civil engineering infrastructure, management and lifecycle assessment.

List of Tutorials

1. Infrastructure and its impact on development
2. Infrastructure need assessment
3. Infrastructure systems
4. Study of transportation network and water resources
5. Collection and analysis of data
6. Infrastructure system application, and case study of any infrastructure project

Open Ended Projects: cases study of infrastructure projects**Major Equipments:nil****List of Open Source Software/learning website: STAAD,STRAP**

http://en.wikipedia.org/wiki/Category:Civil_engineering

Review Presentation (RP): The concerned faculty member shall provide the list of peer reviewed Journals and Tier-I and Tier-II Conferences relating to the subject (or relating to the area of thesis for seminar) to the students in the beginning of the semester. The same list will be uploaded on GTU website during the first two weeks of the start of the semester. Every student or a group of students shall critically study 2 papers, integrate the details and make presentation in the last two weeks of the semester. The GTU marks entry portal will allow entry of marks only after uploading of the best 3 presentations. A unique id number will be generated only after uploading the presentations. Thereafter the entry of marks will be allowed. The best 3 presentations of each college will be uploaded on GTU website.