

GUJARAT TECHNOLOGICAL UNIVERSITY

CIVIL (WATER RESOURCES ENGINEERING) (33) WATER RESOURCES PLANNING

SUBJECT CODE: 2723303

SEMESTER: II

Type of course: Water resources engineering

Prerequisite: Fundamental knowledge of irrigation, benefit cost analysis, reservoir operations and reservoir capacity.

Rationale: Students will be able to understand economic analysis of a water resources project, benefit cost analysis and allocation of cost to various elements of project.

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.	River valley development projects, estimation of available water resources and demand patterns, Fixing objectives, Data required for project formulation, Study of various alternatives, Feasibility, Planning of multipurpose projects, Economics of water resources projects, Benefit-cost analysis, case discount flow methods, Dynamics of project analysis	21	50
2	Economic planning by project purpose, Methods of allocation, cost to various purposes of project, Reservoir capacity, reservoir working tables, Reservoir operation for optimum benefits, simulation techniques, Water law and policies, Interstate and international problems, Economic, environmental and social impact on water resources projects, Risk and uncertainty considerations in water resources planning, financing of water development projects.	21	50

Reference Books:

1. Economics of water resources planning – L. Douglas James
2. Water resources engineering – Linsley & Franzini
3. Water resources project economics - Edward Kuiper
4. Water resources development - Edward Kuiper
5. Principles of Water Resources Planning – S. Goodman
6. Management of water projects - OECD
7. Water Resources Planning – N.S.Grigg
8. Water Resources Planning and Management – Helweg O. G

9. Water resources planning - Mahapatra

Course Outcome:

After learning the course the students should be able to: understand economic analysis , financial planning and allocation water resources projects

List of Experiments:

Based on Syllabus

Open Ended Projects: cases studies of water resources projects

Major Equipments: nil

List of Open Source Software/learning website:

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