

GUJARAT TECHNOLOGICAL UNIVERSITY
B.E. SEMESTER : V
ENVIRONMENTAL SCIENCE AND ENGINEERING

Subject Name: Watershed Management

Subject Code:153705

Teaching Scheme				Evaluation Scheme			
Theory	Tutorial	Practical	Total	University Exam(E)	University Exam(P)	Mid Sem Exam(Theory) (M)	Practical (Internal)
4	2	0	6	70	0	30	50

Sr No	Course Contents
1	Sources and Sinks of Water: Methods of analysis of soil, Topographical, Rainfall, wind and radiation data, Point and non-point sources and their significance in Environmental Engineering.
2	Remote Sensing: Basic concepts of remote sensing from the application angle for resource potential estimation, Methods of estimation of surface runoff.
3	Introduction to Watersheds: Watershed demarcation, Land use patterns of the watershed, Interactions between ground and surface waters, Characteristics of aquifers, Resources base of watershed- ground and surface waters, Land biological resources and mineral resources and the spatial and temporal distribution of its quality and quantity.
4	Statistical and Probability Analysis of Hydrologic Data: Elements of statistics, Variability and Probability distribution.
5	Impacts on Management: Description of human activities and their impacts on the resources base – Sedimentation, climate region, floods, Present use patterns of the resource base and their impact on the environment.
6	Remedial Measures and Strategies: Best Management Practices for the sustainable management of watershed, Reclamation of land resources, Reclamation of wastewater, Safe recharging of ground water.
7	Case studies: Improvement of watershed areas by various approaches

TEXT BOOKS:

1. Linsley, R.K., and Franzdin J.B., Water Resources Engineering, McGraw-Hill (1971).
2. Subramanya, K.S. Engineering Hydrology, Tata McGraw-Hill (1994).
3. Suresh, R., Watershed Hydrology, Standard Publishers (1995).
4. Chow, V.T., Handbook of Applied Hydrology, McGraw-Hill (1964).