

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. SEMESTER : VIII

CIVIL ENGINEERING

Subject Name: **IRRIGATION WATER MANAGEMENT**

Sr. No.	Course Contents	Total Hrs
1.	Importance of Irrigation, Irrigation in India and Gujarat, Soil-water-plant relationships, estimation of water requirement of crops, evapotranspiration and consumptive use –irrigation water requirement.	10
2.	Methods of irrigation, classification –surface irrigation methods and subsurface methods: border strip method, check basin method, furrow irrigation- design aspects. Sprinkler irrigation-types-components-principles of design of sprinkler method-design problem, Drip irrigation method-components-principles of design of drip irrigation-design problem	14
3.	Irrigation efficiencies –project irrigation efficiency, Scheduling of irrigation-time of irrigation –critical stages of water needs of crops-criteria of scheduling irrigation-frequency and interval of irrigation depth Irrigation water quality-surface water and groundwater quality of irrigation water- irrigation with saline water-improving quality of water –leaching requirements.	12
4.	Water management in high watertable areas, causes of water logging, Classification of drainages, Prevention of high water table, Canal irrigation management-operation and management of canal irrigation, performance evaluation of a canal irrigation system. Community participation in irrigation water management, water users organization, merits and demerits of water users organization, Case Studies	12

Note: Each module carries equal weightage

Term work: Tutorial problems based on above mentioned syllabus

Text Books:

1. D.K. Majumdar, Irrigation Water Management Principles and Practice, PHI
2. A.M. Michael, Irrigation –Theory and Practice, Vikas Publication, New Delhi
3. G.L. Asawa, Irrigation Engineering, Wiley Eastern Ltd.

Reference Books:

1. O.W. Israelsen and V.E. Hansen, Irrigation Principles and Practice, John-Wiley and Sons, New York
2. B.D. Dhawan Studies in Irrigation and Water Management, Common Wealth Publishers, New Delhi