

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. SEMESTER : VIII

CIVIL ENGINEERING

Subject Name: **DESIGN OF HYDRAULIC STRUCTURES**

Sr. No.	Course Contents	Total Hrs
1.	Elements of Dam engineering: Introductory perspectives, Embankment types and Characteristics- Concrete dams and characteristics- Spillways and ancillary works – site assessment and selection of type of dam	04
2.	Embankment dam engineering: Nature and classification of soil- engineering characteristics of soil, principles of design – Material and construction- Internal seepage – Stability and stresses, Settlement and deformation in rock fill embankments	12
3.	Concrete dam engineering: Loading -Concepts and criteria, Gravity dam analysis- design features and stability- elementary profile of gravity dam- Concrete for dams – roller compacted concrete gravity dams	12
4.	Dam outlet works: Spillways – Ogee spillway - cavitation on spillway – design feature- design principles and design of spillways – Chute spillways –Energy dissipation – stilling basins – plunge pools	12
5.	Drop structures: Sarda fall – Glacis fall –Design principles- Cross regulator, head regulator and functions	08

Note: Each module carries equal weight age

Term work: Term work shall be based on above mentioned syllabus

Text Book:

1. Introduction To Water Resources And Waterpower Engineering, By Dr. P N Modi , Standard Publication, Delhi
2. Irrigation And Water Resources Engineering, By G L Asawa, Pub:- New Age Int. Ltd.
3. Irrigation Engineering and Hydraulic Structures by S.K. Garg, Khanna Publishers

Reference Books:

1. Hydraulic Structures, By P. Novak, Pub. Unwin Hyman, London
2. Handbook Of Dam Engineering, By Golze', Pub:- Van Nostrand Reinhold
3. Engineering For Dams, By Creager WP, Justin J D and Hinds J, Weily Pub. New York