No	Information on Every Subject	
1.	Unit Name : Design of hydraulic structure	
2.	Unit Code : CE 51016	
3.	Classification : Engineering Subject	
4.	Credit Hours : 2.5	
	2 for lecture : (2 hours x 15 weeks)	
5.	Semester/Year Offered : 1/5	
6.	Pre-requisite (if any) : None	
7.	Mode of Delivery : Lecture , Tutorial and Assignment	
8.	Assessment System and Breakdown of Marks ::	
	Coursework / Tutorial	20%
	Assignment	10%
	Final Examination	70%
	Total	100%
9.	Academic Staff Teaching Unit :	
10.	Objective of Unit: The objective of this course is to recognize the history of a drop of water as it travels from the cloud to the agricultural field.	
11.	Learning Outcomes of Unit: (a) To give overview knowledge of irrigation, water power and water resources engineering (b) To explain about reservoirs in water resources engineering (c) To identify dam engineering and spillways	
12.	Synopsis of Unit: This unit is discussed the various irrigation structures encountered by the drop of water in a sequence.	
13.	**Topic 1: Gravity Dams** • Introduction • Forces on acting on a gravity dam • Water pressure • Uplift pressure • Wave pressure • Silt pressure • Earthquake forces	

	• Stability requirements • Elementary profile of a gravity dam **Topic 2: Embankment Dams** • Introduction • Types of earth dams based on methods of construction • Causes of failure of earth dams • Phreatic line for homogeneous earth dam with horizontal drainage blanket • Stability of foundation against shear **Topic 3: Reservoir Planning** • Introduction • Types of reservoirs • Available storage capacity of a reservoir • Selection of site for a reservoir • Analytical method for determination of storage capacity • Determination of yield of a reservoir **Topic 4: Spillways** • Introduction • Essential requirements of a spillway • Discharge computation for an ogee spillway • Siphon spillways • Advantage and disadvantage of siphon spillway • Stilling basins • Bucket type energy dissipator
14.	Main References: Irrigation , Water Power and Water Resources Engineering by Dr.K.R. Arora (7^{th} Edition)