

## Course Modules of the Subject Taught for the Session Feb – May 2025-26 (Even Semester)

### Course Syllabi with CO's

Faculty Name: <b>Manu Vijay</b>				Academic Year: 2025-2026			
Department: CIVIL ENGINEERING							
Course Code	Course Title	Core/Elective	Prerequisite	Contact Hours			Total Hrs/ Sessions
				L	T	P	
<b>BCV654A</b>	<b>Water conservation &amp; rain water harvesting</b>	<b>Elective</b>	-	<b>3</b>	<b>0</b>	<b>0</b>	<b>40</b>
<b>Objectives</b>	<ul style="list-style-type: none"> <li>Appreciate basic concepts of Water and its importance.</li> <li>Learn elementary knowledge of ground water.</li> <li>Conceptually learn various theories related to Groundwater recharge and Groundwater Recharge.</li> <li>Study about Subsurface investigation of Ground water.</li> </ul>						
<b>Topics Covered as per Syllabus</b>							
<p><b>Water and its importance.</b>          Monsoon– types and behavior in India, rainfall – characteristics and distribution, onset and withdrawal of effective rains, dry spells and wet spells, critical dry spells, water loss from the soil, measurement and factors, hydrological cycle, Importance and issues relating water status Scenario of water in Karnataka: sources, geographical distribution, quality. Water (hydrological) cycle, influence of human activity on the water cycle, Surface water resources.     <b>8 Hours</b></p> <p><b>Module 2 - Elementary knowledge of ground water:</b> general aquifer. Water quality and its impact on human beings. Water harvesting: need, principles of water harvesting, general water harvesting methods - rain water harvesting - methods, classes, benefits, approach, rooftop rainwater harvesting, subsurface barrier/dykes, farm ponding, etc. mostly used in rural areas.     <b>8 Hours</b></p> <p><b>Module 3 - Groundwater recharge:</b>          Factors affecting groundwater recharge, Revival of traditional techniques for water harvesting. Calculation of available rain water for harvesting. Preparation of suitable technical drawing and design of rain water harvesting structure. <b>8 Hours</b></p> <p><b>Module 4 - Elementary conservation of water:</b> Importance, knowledge regarding conservation/saving of water in daily use, in agriculture, in industries. Water Conservation strategies- Limiting the consumption, Reuse and recycling, Elimination of losses, Pollution prevention.     <b>8 Hours</b></p> <p><b>Module 5 - Subsurface investigation of Ground water:</b> General, geophysical methods and its importance. Present law regarding water management Water footprints- Blue water footprint, green water footprint, grey water footprint. Sustainability Assessment.     <b>8 Hours</b></p>							
<b>List of Books :1. Water Resources Engineering By Author: K. Subramanya Publisher: McGraw Hill Educatio</b>							
<b>URLs:</b> <a href="https://www.youtube.com/watch?v= l4QyPSZun4">https://www.youtube.com/watch?v= l4QyPSZun4</a> <a href="https://www.youtube.com/watch?v=6C62XXp95BM">https://www.youtube.com/watch?v=6C62XXp95BM</a>							
<b>Course Outcomes</b>	Understand the significance of water, its issues and current status						
	Acquire knowledge on principals of water harvesting and challenges						
	Calculate and prepare design rain water harvesting structures						
	Identify various geophysical methods, water management laws and sustainability assessment process.						

**Internal Assessment Marks:** Three Unit Tests each of 25 Marks, assignment component of the CIE will be 25 marks. For the course, CIE marks will be based on a scaled-down sum of two tests and other methods of assessment scaled down to 50 marks.

### The Correlation of Course Outcomes (CO's) and Program Outcomes (PO's)

Subject Code:	BCV654A	TITLE: Water conservation & rainwater harvesting						Faculty Name:	<b>Manu Vijay</b>				
List of Course Outcomes	Program Outcomes												
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	TOTAL
CO-1	2			1		2	2	1		1		1	10
CO-2	2	2		1		2	2	1		1		1	12
CO-3	1	1	2			2	1	1		1		1	10
CO-4	1	2	1			2	1	1		1		1	10

**Note:** 3 = Strong Contribution    2 = Average Contribution    1 = Weak Contribution    - = No Contribution

### The Correlation of Course Outcomes (CO's) and Program Specific Outcomes (PSO's)

Subject Code:	BCV654A	TITLE: Water conservation & rainwater harvesting				Faculty Name:	<b>Manu Vijay</b>	
List of Course Outcomes	Program Specific Outcomes							
	PSO1			PSO2			TOTAL	
CO-1	-			1			1	
CO-2	-			2			2	
CO-3	-			2			2	
CO-4	-			1			1	

**Note:** 3 = Strong Contribution    2 = Average Contribution    1 = Weak Contribution    - = No Contribution