## DEPARTMENT OF CIVIL ENGINEERING CO-PO matrices of courses (Theory) CLASS - B.Tech.

ACADEMIC YEAR 2024-25

Note: Enter corre	lation levels 1.2 or 3 as def	ined below:		
1: Slight(Low)	2: Moderate(Medium)	3: Substa	)	

SR. NO.	COURSE NAME	COURSE CODE	SEMESTER	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3				
					3	2	3			2		2		3		3		2					
1 Design of Reinforced & Prestressed Concrete Structures				To identify the behavior, analyze and design of the beam sections subjected to torsion.	3		3			2		3		2		3		3					
	BTCVC701	VII	To analyze and design of axially and eccentrically loaded column and construct the interaction diagram for them.	2				3					2		2		2						
	Design of Reinforced & Frestressed Concrete Structures	BICVC/01	VII VII	To understand various concepts, systems and losses in pre-stressing.	3	3	3			2		2		3		3		3					
				To analyze and design the rectangular and symmetrical I-section pre-stressed beam/girder																			
2 Infrastructure Engineering				To Know about the basics and design of various components of railway engineering	3	2	3				2						3						
	Infractivisture Engineering	PTCVC702	vп	To Understand the types and functions of tracks, junctions and railway stations.	3	2	2										2	2					
	Intrastructure Engineering	BICVC/02		To understand Airport engineering.	3	2	2		2		2			1		1	3		1				
				To understand Docks and Harbours.	3	2	2		2		2					1							
																			-				
3 Construction Techniques				1. To understand the planning of new project with site accessibility and services required.	2			3	3		2	2	1	3	1	3	2						
	Construction Techniques	BTCVC703	VII	2. To comprehend the various civil construction equipment's.	3	2			1		2			2			1						
	Construction Techniques		· · ·	<ol> <li>To familiar with layout of RMC plant, production, capacity and operation process.</li> </ol>	2			2					1		2		2						
				4. To recognize various aspect of road construction, construction of diaphragm walls, railway track construction etc.	2		1	2							2								
4	Professional Practices	BTCVC704		1: Understand the importance of preparing the types of estimates under different conditions for various structures.	3	3						2	3		2	3	3	3	3				
			VII	2: Know about the rate analysis and bill preparations and to study about the specification writing.	3	3	2	2		1		2	3		2	3	3	3	3				
				3: Understand the various types of contract, accounts in PWD, methods for initiating the works in PWD and tendering along with different methods of valuation.	3	1				1		3	3		2	3	3	3	3				
																	L						
5 В				CO1: Understand components of bridges and its various types.	3	2					2												
	Bridge Engineering	BTCVE705I	VII	CO2: Understand site selection criteria and comprehend various forces acting on bridges.	3	3		2	2								<u> </u>	$ \rightarrow $					
	bing inguiting			CO3: Analyze bridge structures using different analysis techniques	3	2	3		2	2	2				2								
				CO4: Understand the importance of different types of bridge bearings	2	3	3		2		3				2								
																	<u> </u>						
6 Maintenance ar		BTCVSS801D	viii	Understand the causes and types of deterioration in concrete structures and the need for maintenance and repair	3	2					2						3						
	Maintenance and Repair of Concrete Structures			Identify and assess different types of damages in concrete structures using appropriate inspection and testing methods.	3	3		2	2								3	1					
				Select suitable materials and techniques for repair and rehabilitation based on the type and extent of damage.	3	2	3		2	2	2				2		3						
				Design maintenance strategies and repair procedures to extend the service life of concrete structures.	2	3	3		2		3				2		2		1				
				1)To understand mechanical response and grading system.	3	2	2	1	1							2	1	1	1				
7 Mechanical Characterization of Bituminou	Mechanical Characterization of Bituminous Materials	BTCVSS802D	BTCVSS802D	BTCVSS802D	BTCVSS802D	BTCVSS802D	VIII	2)To get knowldge about Rehological and various tests to be carried out and how to use it for design purpose.	3	3	3	2	2	2						3	3	2	3
			1	3)After studying this course, students must be in a position to join the service involved refineries, modified bituminous manufacturers, state and central Government road services.	3	3	2	1								2	3	1 1	2				