

R.K INSTITUTE OF TECHNOLOGY & ENGINEERING CUTTACK LESSON PLAN- 2025/26 (SUMMER)

Discipline: CIVIL ENGG.	Semester:6thSem		Name of the Teaching Faculty: Mr. RADHESHYAM JENA	
Subject: CT	No .of Days/ per week class allotted:04		SemesterFrom date:22.12.2025 To Date:18.04.2026	
Day		Unit	Topics	
		UNIT-1	1. Concrete as a construction material: Grades of concrete Advantages and disadvantages of concrete.	
1st				
2nd				
3rd		UNIT-2	2. Cement: Composition, hydration of cement, water cement ratio and compressive strength	
5th			Fineness of cement, setting time, soundness	
1st			Types of cement.	
2nd			Question Discussion	
3rd		UNIT-3	3. Aggregate, Water and Admixtures: Classification and characteristics of aggregate, fineness modulus, grading of aggregate, I.S.383	
5th			Quality of water for mixing and Curing.	
1st			Important functions, classification of admixtures, I.S.9103, accelerating admixtures, retarding admixtures, water reducing admixtures, air containing admixtures	
2nd			Question Discussion	
3rd		UNIT-4	CLASSTEST-1	
5th			4. Properties of fresh concrete: Concept of fresh concrete, workability, slump test, compacting factor test	
1st			V-bee consistency test and flow test, requirement of workability, I.S.1199.	
2nd			Question Discussion	
3rd		UNIT-5		
5th			5. Properties of hardened concrete: Cube and cylinder compressive strengths, flexural strength of concrete,	
1st			Stress-strain and elasticity, phenomena of creep and shrinkage,	
2nd			Permeability, durability of concrete	
3rd				
5th			Sulphate, chloride and dace attack on concrete, efflorescence.	
1st			Question Discussion	
2nd		UNIT-6	6. Concrete mix Design	
3rd			a) Introduction	
5th			b) Data or input required for mix design.	
1st			Nominal mix concrete & design mix concrete.	
2nd			Basic consideration for concrete mix design, Method of proportioning concrete mix – I.S. Code method of mix design (I.S.10262)	
		Question Discussion		

3rd	Internal Assessment 7. Production of concrete: Batching of materials, mixing of concrete materials, Transportation, placing of concrete, compaction of concrete (vibrators), Curing of concrete, Formwork - requirements and types, stripping of forms. (Concepts only) Question Discussion Question Discussion
5th	
1st	
2nd	
3rd	
5th	
1st	
2nd	
3rd	8. Inspection and Quality Control of Concrete Quality control of Concrete as per I.S. 456, Factors causing the variations in the quality of concrete Mixing, Transporting, Placing & curing requirements of Concrete as per I.S. 456. Inspection and Testing as per Clause 17 of I.S:456. Durability requirements of Concrete as per I.S:456. Question Discussion
5th	
1st	
2nd	
3rd	
5th	9. Special Concrete Introduction to ready-mix concrete, high-performance concrete, Silica fume concrete, shot-creation concrete or guniting (Concepts only). Question Discussion
1st	
2nd	
3rd	
5th	
1st	CLASSTEST-2 10. Deterioration of concrete and its prevention: Types of deterioration Prevention of concrete deterioration Corrosion of reinforcement, Question Discussion Effects and prevention Question Discussion
2nd	
3rd	
5th	
1st	
2nd	
3rd	
5th	11. Repair technology for concrete structures: Symptom, cause and prevention and remedy of defects during construction, Cracking of concrete due to different causes, Repair of cracks for different purposes, Question Discussion Selection of techniques, polymer base repairs, common types of repairs. Question Discussion Semester Question Discussion Semester Question Discussion
1st	
2nd	
3rd	
5th	
1st	
2nd	

