



Shree Vile Parle Kelavani Mandal's
Institute of Technology, Dhule
Approved by AICTE & Affiliated to DBATU
DEPARTMENT OF CIVIL ENGINEERING

LESSON PLAN

Academic Year : 2022-23
Semester : V
Class : TY

Course Code : BTCVC504
Course Title : Concrete Technology

Teaching scheme:
Lectures: 2 Hrs./week
Credit: TH: 02

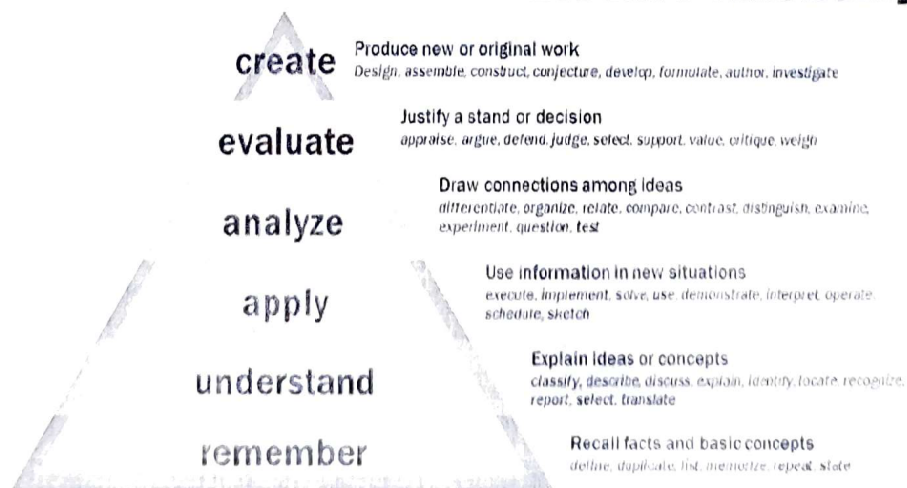
Examination scheme:
CA1 and CA2 : 20 Marks
Mid-Sem Exam: 20 Marks
End-Sem Exam: 60 Marks

CO	Description	Blooms Level	Mapping with POs	Mapping with PSOs
C504.1	Understand the various types and properties of ingredients of concrete.	1 - Remember	1,2,3	1
C504.2	Understand effect of admixtures on the behavior of the fresh and hardened concrete along with the effects of creep and shrinkage of concrete	1 - Remember	1,2,3,4	1,2,3
C504.3	Formulate concrete design mix for various grades of concrete and understanding the nondestructive testing of concrete.	4- Analysis	1,2,3	1,3

Table – COs & TLOs with their Bloom's Level

Sr.No.	TLO	CO	TLO Description	BL
1	TLO1	CO1	Describe the properties of cement along with its type, manufacturing process and test conducted on cement	2 - Understand
2	TLO2		Define types of aggregates along with its properties and test conducted on it with properties of water to be used for concreting.	2 - Understand
3	TLO3	CO2	Understand the properties of fresh concrete along with manufacturing process of concrete	1-Remember
4	TLO4		Illustrate types of admixtures along with its properties with understanding the effect of chemical attack on concrete	2 - Understand
5	TLO5		Define the properties of hardened concrete along with types of concrete with the effects of creep and shrinkage of concrete	1-Remember
6	TLO6	CO3	Understand concrete mix design methods and Factors Governing Mix Design	4- Analysis
7	TLO7		Define the nondestructive testing of concrete.	2 - Understand
8	TLO8		Design and validate the concrete mix with help of different concrete mix design methods.	4- Analysis

Bloom's Taxonomy



Lecture No	Planning Date	Topic planned/ Practical planned	Actual Date	Topic Covered/ Practical covered	TLO	CO	Resources used	References
UNIT - I								
1.	5/9/22	Introduction to Concrete Technology	5/9/22	Intro. to the concrete Tech.	TLO1	CO1	PPT Presentation, Discussion	T1,T2,R1, R2
2.	6/9/22	Cement origin and Manufacturing process of Cement	6/9/22	History of cement & its origin in India.	TLO1	CO1	PPT Presentation, Discussion	T1,T2,R1, R2
3.	8/9/22	Physical process, Hydration and Chemical compounds in cement	6/9/22	manufacturing process of cement	TLO1	CO1	PPT Presentation, Discussion	T1,T2,R1, R2
4.	12/9/22	Types of cement and aggregates	8/9/22	HOH reqd & chemical compd of cement	TLO1	CO1	PPT Presentation, Discussion	T1,T2,R1, R2
5.	13/9/22	Physical properties of aggregates and bulking of sand	14/9/22	Types of properties of cement	TLO2	CO1	PPT Presentation, Discussion	T1,T2,R1, R2
6.	15/9/22	Mechanical properties of aggregates and importance of water	13/9/22	physical prop. of aggregates.	TLO2	CO1	PPT Presentation, Discussion	T1,T2,R1, R2
UNIT - II								
7.	19/9/22	Introduction to fresh concrete	14/9/22	Mechanical prop. of aggregates.	TLO3	CO2	PPT Presentation, Discussion	T1,T2,R1, R2
8.	20/9/22	Types of batching, mixing and transportation of concrete	19/9/22	Intro. to the fresh concrete	TLO3	CO2	PPT Presentation, Discussion	T1,T2,R1, R2
9.	22/9/22	Workability and factors affecting it	20/9/22	Types of Batching, mixing, transp. of concrete.	TLO3	CO2	PPT Presentation.	T1,T2,R1, R2

							Discussion	
10.	26/9/22	Methods of measuring workability	29/9/22	Workability & factors affecting it.	TLO3	CO2	PPT Presentation, Discussion	T1,T2,R1, R2
11.	27/9/22	Segregation, Bleeding and curing of concrete	26/9/22	Tests for workability & consistency.	TLO3	CO2	PPT Presentation, Discussion	T1,T2,R1, R2
12.	29/9/22	Temperature effects on fresh concrete	27/9/22	Segre., bleeding, curing of concrete	TLO3	CO2	PPT Presentation, Discussion	T1,T2,R1, R2
UNIT - III								
13.	3/10/22	Admixtures Introduction and its types	29/9/22	Temp. effect on fresh concrete.	TLO4	CO2	PPT Presentation, Discussion	T1,T2,R1, R2
14.	4/10/22	Plasticizers, Air Entrainment, Accelerators	4/10/22	Compaction & curing of concrete.	TLO4	CO2	PPT Presentation, Discussion	T1,T2,R1, R2
15.	6/10/22	Artificial and bonding admixture	6/10/22	Intro. to admixtures & its types	TLO4	CO2	PPT Presentation, Discussion	T1,T2,R1, R2
16.	10/10/22	Natural Admixtures	7/10/22	plasticizers, Air entrainment, Accelerators	TLO4	CO2	PPT Presentation, Discussion	T1,T2,R1, R2
UNIT - IV								
17.	11/10/22	Desired properties of concrete strength and durability test	10/10/22	Artificial & bonding Admix.	TLO5	CO2	PPT Presentation, Discussion	T1,T2,R1, R2
18.	20/10/22	Characteristics strength, Compressive Strength and Tensile Strength	10/10/22	mineral & natural Admixtures.	TLO5	CO2	PPT Presentation, Discussion	T1,T2,R1, R2

19.	27/10/22	Test on Hardened concrete , Effect of water / cement ratio and admixture on strength	31/10/22	Desired properties of concrete.	TLO5	CO2	PPT Presentation, Discussion	T1,T2,R1, R2
20.	4/11/22	Types of concrete	10/11/22	Types of strength of concrete.	TLO5	CO2	PPT Presentation, Discussion	T1,T2,R1, R2
21.	3/11/22	Creep and shrinkage of concrete	10/11/22	Test on Hardened concrete.	TLO5	CO2	PPT Presentation, Discussion	T1,T2,R1, R2
22.	7/11/22	Durability of concrete	11/11/22	Types of concrete	TLO5	CO2	PPT Presentation, Discussion	T1,T2,R1, R2
23.	9/11/22	Cracks types and Factors contributing to crack	14/11/22	Creep & shrinkage of concrete.	TLO4	CO2	PPT Presentation, Discussion	T1,T2,R1, R2
24.	10/11/22	Alkali aggregate Reaction and factors affecting it	12/11/22	Durability of concrete	TLO4	CO2	PPT Presentation, Discussion	T1,T2,R1, R2
25.	14/11/22	Chloride attack and corrosion of steel and sulphate attack on concrete	14/11/22	Types of cracks & factors affecting it.	TLO4	CO2	PPT Presentation, Discussion	T1,T2,R1, R2
UNIT - V								
26.	15/11/22	Nominal mix concrete , Factors affecting mix design, Methods of expressing proportions	15/11/22	AAR & factors affecting it	TLO6	CO3	PPT Presentation, Discussion	T1,T2,R1, R2
27.	17/11/22	Factors causing the variation in concrete mix	17/11/22	chloride attack , corrosion of steel sulphate attack on concrete.	TLO5, TLO6	CO3	PPT Presentation, Discussion	T1,T2,R1, R2

		design for different methods						
28.	21/11/22	Numerical on IS Method of Mix Design	21/11/22	Nominal mix concrete & factors	TLO5, TLO6	CO3	PPT Presentation, Discussion	T1, T2, R1, R2
29.	22/11/22	Numerical on ACI Method of Mix Design	22/11/22	methods of expression of proportions.	TLO5, TLO6	CO3	PPT Presentation, Discussion	T1, T2, R1, R2
30.	24/11/22	Numerical on DOE Method of Mix Design	24/11/22	IS method of mix Design.	TLO5, TLO6	CO3	PPT Presentation, Discussion	T1, T2, R1, R2
31.	28/11/22	Nondestructive testing of concrete	24/11/22	factors causing variation in concrete.	TLO5, TLO6	CO3	PPT Presentation, Discussion	T1, T2, R1, R2
32.			25/11/22	ACI & IS method difference	TLO5, TLO6	CO3	PPT, Discussion	T1, T2, R1, R2, R3
33.			28/11/22	Numerical on ACI method.	TLO5, TLO6	CO3	PPT, Discussion.	T1, T2, R1, R2
34.			28/11/22	Numerical on DOE method.	TLO5, TLO6	CO3	PPT, Discussion	T1, T2, R1, R2
35.			29/11/22	Introduction to NDT of concrete	TLO5, TLO6	CO3	PPT, Discussion	T1, T2, R1, R2
36.			01/12/22	Types of NDT	TLO5, TLO6	CO3	PPT Discussion.	T1, T2, R1, R2
37.								

Teaching Aids:

BOOKS REFERRED

Text Books

T1: Gambhir M. L. "Concrete Technology", Tata Mc-Graw Hill 2015 15th edition

T2: Shetty M. S. "Concrete Technology", S. Chand 2005.

T3 : Krishnaswamy, "Concrete Technology", Dhanapat Rai and Sons

Reference Books

R1: Orchard, "Concrete Technology", Applied Science Publishers

R2: Neville A. M., "Concrete Technology", Pearson Education

R3: Neville A. M., "Properties of Concrete", Pearson Education

R4: Relevant Publications by Bureau of Indian Standards, New Delhi

R5: IS:10262(2009), IS:456 (2009), IS 4926 (2003)

Digital Content:

DC1: <https://cs-iitd.vlabs.ac.in/>

DC2: https://onlinecourses.nptel.ac.in/noc20_ce45/preview

DC3: https://onlinecourses.nptel.ac.in/noc19_ce20/preview

Course Coordinator

Module coordinator

NBA Coordinator

HOD