B.Tech. (Civil Engineering)				
Course Code: Course Title	**Course Structure**			**Pre-requisite**
CE329 : Concrete Technology	**L**	**T**	**P**	**Nil**
	3	**0**	**2**	

Course Objective: Fostering students' competence for the evaluation of cement, fine aggregate, coarse aggregate, pozzolanic materials, and performance improvers properties and finalization of mix proportions, conventional concrete, high-strength concrete, high-performance concrete, and self-compacting concrete.

S.N.	Course Outcomes (COs)
CO1	Students can test cement for its various properties.
CO2	Students can test fine aggregate for its various properties.
CO3	Students can test Coarse aggregate for its various properties.
CO4	Students can evaluate various properties of pozzolanic materials and viscosity-modifying agents and determine the compatibility of super-plasticizer.
CO5	Students can design various types of concrete mixes.

S. No.	Contents	Contact Hours
Unit 1	Cement: Role of various compound oxides present in cement, various tests for cement properties, and influences of those properties on the final product. Various tests to ensure the suitability of water.	8
Unit 2	Fine Aggregate: Tests for various properties and role of these properties, grading zone, gradation curve, and tailoring for desired gradation.	8
Unit 3	Coarse Aggregate: Tests for various properties and role of these properties, gradation curve, and tailoring for the desired gradation.	8
Unit 4	Evaluation of various properties of pozzolanic materials, role of these properties, compatibility of super-plasticizer, and role of viscosity-modifying agents.	8
Unit 5	Durability, design of mixes for conventional concrete, high-strength concrete, high-performance concrete, and self-compacting concrete.	10
Total		**42**

REFERENCES		
S.N.	**Name of Book/ Author(s)/Publisher**	**Year of Publication / Reprint**
1.	Concrete Technology by A.M. Neville and J.J. Brooks, published by Pearson India Education Services Pvt. Ltd., Noida.	2010
2.	Concrete *Micro-structure, Properties & Materials* by P.K. Mehta & P.J.M. Monteiro and published by ICI, Chennai	1997
3.	Concrete Admixtures Handbook: *Properties, Science and Technology* by V.S. Ramchandran and published by Standard Publishers Distributors, Delhi.	2002
4.	Concrete Technology by M.L. Gambhir and published by McGraw Hill Education (India) Pvt. Ltd., New Delhi.	2014
5.	Concrete Technology Theory and Practice by M.S. Shetty, published by S. Chand & Company Ltd., New Delhi.	1992
6	IS: 456-2000, "Plain and Reinforced Concrete-Code of Practice", BIS, New Delhi. And, IS: 10262-2019, "Concrete Mix Proportioning – Guidelines (2nd Revision)", BIS, New Delhi.	Latest