Appendix - C

GOPALAN COLLEGE OF ENGINEERING AND MANAGEMENT

Department of Civil Engineering

Academic Year: **2017-18** Semester**: EVEN**

COURSE PLAN

Semester: **VIII** Subject Code& Name: **10CV81**

Name of Subject Teacher: **G.JEEVA JOTHI**

Name of Subject Expert (Reviewer): **KALYANI DONKARGAR**

For the Period: From:

Details of Book to be referred:

Text Books	**TB 1:Properties of Concrete**- Neville, A.M. - ELBS Edition, Longman Ltd., London **TB 2: Concrete Technology**- M.S. Shetty **TB 3: Concrete Technology**- A.R. Santhakumar,-Oxford University Press **TB 4: ACI Code for** Mix Design **TB 5: IS 10262-2004**.
Reference Books	**RB 1: Concrete Mix Design**- N. Krishna Raju - Sehgal Publishers **RB 2: Advanced Concrete Technology Processes**- John Newman, Ban Seng Choo, - London.

Lecture NO	Topic Planned	Practical Applications & Brief objectives	Book referred with Pg No.	Planned Date	Executed Date	Deviation Reasons thereof	How Made Good / Reciprocate arrangement	Remark by HOD
1.	**UNIT 1** Introduction to Bogue's compound	**Objective:** Understanding the characteristics and	TB 1, 9 TB 2,15	06/02/2017				

2.	Structure of hydrated cement.	composition of cement as building material. To check the characteristics of cement. **Application:** Understanding the basic process helps in manufacture of OPC. **OUTCOME:** This unit deals with the characteristics composition and grades of cement so that the students get a detailed idea about the usage of cement.	TB 1, 25 TB 2, 22	06/02/2017				
3.	Volume of hydrated and porosity of concrete		TB 1, 26	07/02/2017				
4.	Porosity of cement paste and concrete and elastic modulus.		TB 1, 31	08/02/2017				
5.	Factors affecting strength and elasticity of concrete		TB 2, 329	09/02/2017				
6.	Transition zone		TB 2, 387	13/02/2017				
7.	Rheology of concrete		www.theconcreteportal.com/rheology.html	14/02/2017				
8.	Tutorial 1		VTU Question Paper	15/02/2017				
9.	Revision / Unit test			15/02/2017				
10	**UNIT 2** Introduction to admixtures and its usage .Chemical admixtures	**Objective:** Introduce the concept of adding admixtures to concrete. Effects and impacts of plasticizer, accelerators and retarders are made clear. **Application:** Various Admixtures found in market makes the construction easy and efficient. Accelerators help in quick setting which is widely used in dam construction. **OUTCOME:** Expose the students to	TB 2, 124	16/02/2017				
11	Plasticizers, accelerators, retarders and super plasticizer.		TB 2, 126-129	20/02/2017				
12	Effect of plasticizer on concrete property in fresh and hardened concrete		TB 1,255 and 257	21/02/2017				
13	Marsh cone test for optimum dosage of super plasticizer		TB 2,132	22/02/2017				
14	Air entraining admixtures. New generation super plasticizer		TB 2,159 www.yapichem.com.tr/kategori/new-generation	27/02/2017				

15	Mineral admixtures	various kinds of admixtures like chemical admixtures and mineral admixtures, its usage and application in the construction field.	TB 3, 82	28/02/2017				
16	Tutorial 2		VTU Question Paper	01/03/2017				
17	Revision / Unit test			01/03/2017				
18	**UNIT 3** Introduction to mix design of concrete and different situation for adopting various mixes.	**Objective:** To understand the concept of mix design with respect to the materials proportion in concrete processing and also introducing the usage of IS code in mix design procedure. **Application:** Mix design is done for building that has to be constructed in any place with various climatic conditions. **OUTCOME:** Students will be able to design the composition of any type of concrete which can be used in future projects.	TB 4, 2	02/03/2017				
19	Variables in proportioning.		TB 2, 3	06/03/2017				
20	Exposure conditions.		TB 1, 2	07/03/2017				
21	Procedure of mix design as per IS 10262.		TB 4, 5	08/03/2017				
22	Numerical problems of mix design.		TB 4, 5	08/03/2017				
23	Numerical problems of mix design.		TB 4, 5	13/03/2017				
24	Procedure of mix design as per ACI.		TB 4, 5	14/03/2017				
25	Tutorial 3		VTU Question Paper	15/03/2017				
26	Revision / Unit test			15/03/2017				
27	**UNIT 4** Durability-meaning, significance with practical examples.	**Objective:** To understand the property of durability of concrete with respect to atmospheric influences and other chemical attack and its effect on structural members. **Application:** A durable material helps the	TB 2, 349-351	16/03/2017				
28	Permeability and chemical attack.		TB 2, 354 TB 2, 389	20/03/2017				
29	Acid attack and carbonation.		TB 1, 505 and 506	21/03/2017				
30	Thermal conductivity and Thermal diffusivity.		TB 1, 148	22/03/2017				

31	Specific heat.	environment by conserving resources and reducing wastes and the environmental impacts of repair and replacement. **OUTCOME:** Students get a better idea about durability of concrete and the exact period it fails.	TB 1, 148	22/03/2017				
32	Alkali aggregate reaction.		TB 2, 394	23/03/2017				
33	Practical exposure to the concept of durability of concrete as per IS 456.		www.concretethinker.com/solutions/Durability	27/03/2017				
34	Tutorial 4		VTU Question Paper	28/03/2017				
35	Revision / Unit test			30/03/2017				
36	**UNIT 5** Introduction to RMC concrete and its general application.	**Objective:** To analyze various characteristics of concrete with respect its application in construction. **Application:** RMC is used in countries with cold weather. Speed of construction is more in RMC concrete **OUTCOME:** It helps the students to understand new techniques in concrete transporting for huge projects.	TB 1, 214	03/04/2017				
37	Manufacture, transporting, placing and precaution.		TB 2, 238-251	04/04/2017				
38	Methods of concreting, pumping, underwater shortcrete.		TB 1, 217 and 219, 224	05/04/2017				
39	High volume fly ash concrete		TB 2, 180	05/04/2017				
40	Typical mix.		TB 4 TB 3, 353	06/04/2017				
41	Self compacting concrete and tests.		TB 2, 572	10/04/2017				
42	Tutorial 5		VTU Question Paper	11/04/2017				
43	Revision / Unit test			12/04/2017				
44	**UNIT 6** Introduction to fiber and types.	**Objective:** To understand the property of fiber types and behavior of FRC in different conditions. **Application:**	TB 2, 526	12/04/2017				
45	FRC in compression and tension.		TB 2, 536	13/04/2017				
46	FRC in flexure and shear.		TB 2, 539	20/04/2017				

47	Pre-cracking and post cracking stages.	It Reduce steel reinforcement requirements and economically cheap. It claims 500 times more resistance to cracking and 40 percent lighter than traditional concrete. **OUTCOME:** Students study the development of cracks and help them to develop modern techniques in fiber reinforcement.	TB 3, 472-475	24/04/2017				
48	Ferro cement materials techniques		TB 2, 568	25/04/2017				
49	Ferro cement properties		TB 2, 566	26/04/2017				
50	Application of FRC.		TB 2, 570	26/04/2017				
51	Tutorial 6		VTU Question Paper	27/04/2017				
	Revision / Unit test			27/04/2017				
52	**UNIT 7** Introduction to the concept of light weight concrete materials and types	**Objective:** To understand the concept of light weight concrete and its application. **Application:** It is Easy to transport and the dead load of the building is comparatively low. It reduces the seismic action. **OUTCOME:** It helps the students to know more about geotechnical stabilization and thermal insulation.	TB 2, 504	02/05/2017				
53	Typical light weight concrete mix		TB 2, 510	03/05/2017				
54	High density concrete		TB 2, 520	03/05/2017				
55	High performance concrete		TB 2, 323 TB 3, 295	04/05/2017				
56	Properties and application		inpressco.com/wp-content/uploads/2016/06/Paper45982-985.pdf	08/05/2017				
57	Typical mix		TB 4	09/05/2017				
58	Tutorial 7		VTU Question Paper	10/05/2017				
	Revision / Unit test			10/05/2017				
59	**UNIT 8** Effect and condition of specimen capping.	**Objective:** To understand the concept of various test of hardened	www.engineeringcivil.com/capping-concrete-	10/05/2017				

		and NDT**.** **Application:** The tests performed on concrete are used to predict the durability, creep and shrinkage properties of concrete. **OUTCOME:** Students getting knowledge of all these tests help them to perform any kind of tests when they get placed in companies. They come to know about the properties of concrete in fresh and hardened state. It gives a better knowledge about concrete behavior.	specimen					
60	H/D ratio, rate of loading moisture condition.		https://www.concrete.org/publications/internationalconcreteabstractsportal	11/05/2017				
61	Compression , tension and flexural tests		TB 2, 581 TB 2, 594	15/05/2017				
	Tests on composition of hardened concrete- cement content, w/c ratio.		TB 3, 569	15/05/2017				
62	NDT test concepts		TB 2, 437	16/05/2017				
63	Rebound hammer tests		TB 1, 624	17/05/2017				
64	Pulse velocity methods		TB 1, 631	17/05/2017				
65	Tutorial 7		VTU Question Paper	18/05/2017				
	Revision / Unit test			18/05/2017				
66	Revision 1	Solving VTU Question Paper	VTU Question Paper	19/05/2017				
67	Revision 2			19/02/2017				

Prepared By:_____
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