



G H RAISONI COLLEGE OF ENGINEERING NAGPUR

(An Autonomous Institute affiliated to Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur)

CRPF Gate No.3, Hingna Road, Digdoh Hills, Nagpur. Maharashtra-440016 (India)

Course wise Teaching Plan for Session : Summer Term 2018

Course : Structural Design-I

Faculty : krdabhekar - Mr. Kuldeep R. Dabhekar

Unit	Topic Code	Topic Covered	Date	Course	Section
1	1	Objective & Importance of subject for civil engineering, Introduction to IS 456 :2000	02/05/2018	BCEL420	A
1	2	Course-Prerequisites: Concrete Technology Co-Requisites: Structural Design- I (PR) Course Objective: -	02/05/2018	BCEL420	A
1	3	UNIT I :1.Introduction to the Working Stress Method of RCC design .Basic concept in design for flexure	03/05/2018	BCEL420	A
1	4	Basic concept in design for flexure	03/05/2018	BCEL420	A
1	5	assumptions, design constants. Analysis of the rectangular section. Balanced	07/05/2018	BCEL420	A
1	6	under-reinforced and over-reinforced sections.	07/05/2018	BCEL420	A
1	7	under-reinforced and over-reinforced sections.	08/05/2018	BCEL420	A
1	8	Introduction of IS 456, Working Stress Method Numericals	08/05/2018	BCEL420	A
1	9	Numerical on Working Stress Method	09/05/2018	BCEL420	A
1	10	under-reinforced and over-reinforced sections.	09/05/2018	BCEL420	A
1	11	Drawback & limitations of Working Stress method.	10/05/2018	BCEL420	A
1	12	2. Prestressed Concrete: Properties of high grade materials , concepts of prestressed concrete	10/05/2018	BCEL420	A
2	13	method of pre-stressing , losses in pre-stressing	14/05/2018	BCEL420	A
2	14	Various systems for pre-stressing with particular reference to Freyssinet	14/05/2018	BCEL420	A
2	15	UNIT I II :3. Introduction to Limit State Design: Concept of probabilistic design and limit state design. Magnel Blatton and Gifford Udall system .	15/05/2018	BCEL420	A
2	16	UNIT I II :3. Introduction to Limit State Design: Concept of probabilistic design and limit state design.	15/05/2018	BCEL420	A



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2	17	Characteristic values, partial safety factors, stress strain relationship stress block parameters	16/05/2018	BCEL420	A
2	18	Characteristic values, partial safety factors, stress strain relationship stress block parameters	16/05/2018	BCEL420	A
2	19	failure criteria, types and properties of reinforcement	17/05/2018	BCEL420	A
2	20	limit state of Serviceability and limit state of collapse. Other limit states. Review of IS- 456-2000	17/05/2018	BCEL420	A
2	21	4. Limit State of serviceability (i) Causes and control of cracking: Crack in plastic concrete at early age	21/05/2018	BCEL420	A
2	22	Cracks due to temperature and shrinkage ,restrain induced cracks , cracks due to loading . Needs for crack width control.	21/05/2018	BCEL420	A
2	23	(ii) Moment – curvature relationship , deflection control of beams and one way slabs.(no numerical calculations)	22/05/2018	BCEL420	A
2	24	UNIT III :5. Limit state of collapse in flexure: Analysis and design of singly reinforced rectangular section. Balanced failure mode	22/05/2018	BCEL420	A
2	25	Analysis and design of singly reinforced rectangular section. Balanced failure mode	23/05/2018	BCEL420	A
2	26	Analysis and design of singly reinforced rectangular section. Balanced failure mode	23/05/2018	BCEL420	A
2	27	6. Limit state of Collapse in Flexure : Analysis & design of the Tee & L-beam section.	24/05/2018	BCEL420	A
2	28	primary tension failure mode and primary compression failure mode.	24/05/2018	BCEL420	A
3	29	6. Limit state of Collapse in Flexure : Analysis & design of the Tee & L-beam section.	24/05/2018	BCEL420	A



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Unit	Topic Code	Topic Covered	Date	Course	Section
3	30	7. Limit state of Collapse in Shear & Bond: Design of beam for shear , shear span, post cracking resistance, shear mechanism approach , shear failure modes and collapse loads, interaction of shear , flexure and axial force , Check for bond.	28/05/2018	BCEL420	A
3	31	7. Limit state of Collapse in Shear & Bond: Design of beam for shear , shear span, post cracking resistance, shear mechanism approach , shear failure modes and collapse loads, interaction of shear , flexure and axial force , Check for bond.	28/05/2018	BCEL420	A
3	32	UNIT IV :8. Limit state of collapse in compression: Analysis & design of short axially loaded column.	29/05/2018	BCEL420	A
3	33	Columns subjected to uni-axial bending, use of interaction curves.	29/05/2018	BCEL420	A
3	34	Columns subjected to uni-axial bending, use of interaction curves.	30/05/2018	BCEL420	A
3	35	9. Design of rectangular pad / slopped footing for axial load.	30/05/2018	BCEL420	A
3	36	Design of Cantilever Slab	31/05/2018	BCEL420	A
4	37	UNIT V :10. Design of circular water tank with roof slab/ dome resting on ground by Approximate method/IS code method.	31/05/2018	BCEL420	A
4	38	UNIT V :10. Design of circular water tank with roof slab/ dome resting on ground by Approximate method/IS code method.	04/06/2018	BCEL420	A
4	39	11. Design of rectangular water tank with one-way roof slab resting on ground by approximate method/IS code method	04/06/2018	BCEL420	A
4	40	11. Design of rectangular water tank with one-way roof slab resting on ground by approximate method/IS code method	05/06/2018	BCEL420	A
4	41	UNIT VI :12. Design of one -way, simply supported, single span and cantilever slabs and continuous slab / beam with IS coefficients.	05/06/2018	BCEL420	A



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Dabhekar

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5	42	UNIT VI :12. Design of one -way, simply supported, single span and cantilever slabs and continuous slab / beam with IS coefficients.	06/06/2018	BCEL420	A
5	43	13. Design of two way slab (For discontinuous edged only)	06/06/2018	BCEL420	A
5	44	13. Design of two way slab (For discontinuous edged only)	07/06/2018	BCEL420	A
5	45	14. Design of Dog -Legged /Open Well Staircases	07/06/2018	BCEL420	A
6	46	14. Design of Dog -Legged /Open Well Staircases	07/06/2018	BCEL420	A