

Lesson Plan AY: 2026-27, ODD Semester

Course with Code: Prestressed Concrete – BCV703

Name of the Faculty: Puneeth K

Class No.	MODULE NO.	Topics to be covered	TLP Planned
1	1	Introduction to Syllabus	PPT
2		Concepts of Prestressing	PPT
3		Concepts of Pre-stressing	PPT
4		Historical development of prestressing	PPT
5		Design Codes for Prestressed Structures	PPT
6		Design Codes for Prestressed Structures	PPT
7		Advantages & Limitations of Pre-stressed Concrete Material	PPT
8		Need for High Strength Concrete- High Tension Steel & Types of Pre-stressing Steel	PPT
9		Theory: Losses– Immediate losses due to Friction and wobble, Elastic shortening Anchorage Slip	PPT
10	2	Numerical Problems on losses due to Immediate losses	Chalk and
11		Numerical Problems on losses due to Immediate losses	Chalk and
12		Numerical Problems on losses due to Immediate losses	Chalk and
13		Theory: Time dependent losses due to Creep, Shrinkage and Relaxation losses	PPT
14		Numerical Problems on losses due to Time dependent losses	Chalk and board
15		Numerical Problems on losses due to Time dependent losses	Chalk and board
16		Introduction to Pre-stressing systems	Chalk and board
17		Pre -Tensioning Devices – Post -Tensioning Devices - Anchorage Devices	PPT
18		Pre -Tensioning Devices – Post -Tensioning Devices - Anchorage Devices	PPT
19		Mechanical pre-stressing - Chemical Pre-stressing - Electrical Pre-stressing	PPT
20	3	Combined Load Approach - Internal Couple Approach - Load Balancing Approach	PPT
21		Steel Stress in Bonded and Un-bonded tendons	PPT
22		Design as per IS 1343: Flexure and Shear	Chalk and board
23		Design as per IS 1343: Flexure and Shear	Chalk and board
24		Design as per IS 1343: Crack & Deflection	Chalk and board
25		Design as per IS 1343: Crack & Deflection	Chalk and board
26		Design of Anchorage zone – End block	Chalk and board

27		Design of Anchorage zone – End block	Chalk and board
28		Cable Profiling for different beams	PPT
29		Mechanism of Transfer of Prestress in Pre-Tensioning System and Post Tensioned system	PPT
30		Mechanism of Transfer of Prestress in Pre-Tensioning System and Post Tensioned system	PPT
31	4	Introduction to Circular Prestressing & Types - Design of Prestressed Concrete Pipes	PPT
32		Design of Prestressed Concrete Pipes	Chalk and board
33		Pre-stressing in Buildings – Beams	Chalk and board
34		Pre-stressing in Buildings – Beams	Chalk and board
35		Pre-stressing in Buildings – One-way Slabs	Chalk and board
36		Pre-stressing in Buildings – Two-way Slabs	Chalk and board
37		Pre-stressing in Buildings - Tanks	Chalk and board
38		Pre-stressing in Buildings - Poles	Chalk and board
39		Pre-stressing in Buildings - Piles	Chalk and board
40		Partial Prestress - behavior, advantages and disadvantages, Concepts of Prestressing	PPT
41	5	Introduction to Composite Construction	PPT
42		Analysis-IRC 112	Chalk and board
43		Analysis-IRC 112	Chalk and board
44		Codal provisions for ULS and SLS	PPT
45		Codal provisions for ULS and SLS	PPT
46		Design of a I-girder with cast in situ slab -Viaducts	Chalk and board
47		Design of a I-girder with cast in situ slab -Viaducts	Chalk and board
48		Design of a I-girder with cast in situ slab -Viaducts	Chalk and board
49		Balanced cantilever bridges	PPT
50		Railway sleepers	PPT