Department of Civil Engineering
Govt. Polytechnic for Women Rehan
Distt. – Kangra (H.P.) – 176022
LESSON PLAN

Program Name	Civil Engineering
Subject Name	Design of RCC Structures
Subject Code	CEPC301
Semester	**5th Semester**
Subject Teacher Name	Er. Amish Rehalia

Sr. No.	Subject Name	Study scheme (Hrs/Week)		Marks in Evaluation Scheme					
				Internal Assessment			External Assessment		
		Th	DCS	Th	Pr	Total	Th	Pr	Total
1		2	2	40	-	40	60	-	60

Reference Books	Shah, V. L., and Karve, S.R., Limit State Theory and Design of Reinforced Concrete Structures, Structures Publications, Pune.
	Singh, Birender, Reinforced Cement Concrete Design, Kapson Publication

CO – 1	Know the concept of shear, bond, and development lengths.
CO – 2	Design of Simply Supported RCC beams.
CO – 3	Design one way and two-way slabs.
CO – 4	Identify and Design short and long columns.

		Name of Topic	Proposed Date	Actual Date	Remarks
1	UNIT-I Introduction to R.C.C Designing using Limit State Method	Design Philosophies: Working Stress Theory, Ultimate Design Theory, Limit State Theory Concept of Reinforced Cement Concrete (RCC) Reinforcement Materials	13-08-2024		
2					
3		Suitability of Steel as reinforcing material	14-08-2024		
4		Properties of mild steel and HYSD steel			
5		Loading on structure as per I.S 875.			
6		Study of BIS:456-2000-clause5, clause6, clause9, Clause18, clause19, clause22, clause 23.0, 23.2, 23.3, Clause25, clause26, clause35, clause36, clause37, clause 38, clause 39, clause 40, clause 41, clause42, clause 43, Annexure-B, C, D, E, G	16-08-2024		
7	UNIT-II Shear, Bond, and Development Length (LSM)	Nominal Shear stress in R.C. Section, Design shear strength of concrete, maximum shear stress, Design of shear reinforcement, Minimum shear reinforcement, Forms of shear reinforcement with numerical problems			
8			20-08-2024		
9			&		
10			21-08-2024		
11		Bond and types of bonds, Bond Stress, check for bond stress, Development length in tension and compression, anchorage value for hooks 90° bend and 45° bend. Standard Lapping of bars, check for development length.	22-08-2024		
12					
13			23-08-2024		
14			27-08-2024		
15		Determination of development length required for tension reinforcement of cantilevers beam and slab, check for development length.	28-08-2024		
16			29-08-2024		
17	UNIT-III Analysis and Design of Singly Reinforced Sections	Limit State of collapse (Flexure),	30-08-2024		
18		Assumption stress. Strain relationship for concrete and steel, neutral axis,	03-09-2024		
19		Stress block diagram and Strain diagram for singly reinforced section.	04-09-2024		
20		Concept of under- reinforced section	05-09-2024		
21		over-reinforced and balanced section, neutral axis, limiting value of moment of resistance and limiting percentage	06-09-2024		
22		steel required for balanced singly R.C. Section.	10-09-2024		
23		Simple numerical problems on determining d e s i g n c ons t a nts	11-09-2024		
24			12-09-2024		
25		Class Test-I	13-09-2024		
26		m o m e n t of resistance and area of steel.	18-09-2024		
27		Design of Singly reinforced simply supported beam and cantilever beam.	19-09-2024		
28		Design of Singly reinforced simply supported beam and cantilever beam.	20-09-2024		

29	UNIT-IV Analysis and Design of Doubly Reinforced Sections (LSM)	General features, necessity of providing doubly reinforced reinforcement, limitations.	24-09-2024		
30			25-09-2024		
31			26-09-2024		
32		Analysis of doubly reinforced section	27-09-2024		
33		Strain diagram, stress diagram,	01-10-2024		
34		Depth of neutral axis, moment of resistance of the section.	03-10-2024		
35		Numerical problems on finding moment of resistance.	04-10-2024		
36	UNIT-V Design of One-Way Slab (LSM)	Analysis & Design of simply supported one-way slab.	08-10-2024		
37		Analysis & Design of simply supported one-way slab.	09-10-2024		
38		*Analysis & Design of simply supported one-way slab.*	10-10-2024		
39		Analysis & Design of simply supported one-way slab.	11-10-2024		
40		Class test -2	15-10-2024		
41		Analysis & Design of simply supported one-way slab.	16-10-2024		
42		Analysis & Design of simply supported one-way slab.	18-10-2024		
43					
44		Analysis & Design of simply supported one-way slab.	22-10-2024		
45			23-10-2024		
46	UNIT-VI Two Way Slab (LSM)	Design of two-way simply supported slab with corners free & no provision for torsion reinforcement.	24-10-2024		
47			25-10-2024		
48		Design of two-way simply supported slab with corners free & no provision for torsion reinforcement.	01-11-2024		
49			05-11-2024		
50		Design of two-way simply supported slab with corners free & no provision for torsion reinforcement.	06-11-2024		
51		Design of two-way simply supported slab with corners free & no provision for torsion reinforcement.	07-11-2024		
52		Design of two-way simply supported slab with corners free & no provision for torsion reinforcement.	08-11-2024		
53		House Test	12-11-2024		
54			13-11-2024		
55			14-11-2024		
56		Design of two-way simply supported slab with corners free & no provision for torsion reinforcement.	19-11-2024		
57			20-11-2024		
58	UNIT-VII Design of Axially Loaded Column (LSM)	Assumptions in limit state of collapse–compression	21-11-2024		
59		Definition and classification of columns, effective length of column. Specification for minimum reinforcement; cover,	22-11-2024		
60		maximum reinforcement, number of bars in rectangular, square, and circular sections, diameter and spacing of lateral ties. (No numerical on helical ties).	26-11-2024		
61		Analysis and Design of axially loaded: Uniaxial & Biaxial Bending along with axial loading: short	27-11-2024		
62		square, rectangular, and circular columns with lateral ties only; check for short column and check for minimum eccentricity may be applied.	28-11-2024		
63			29-11-2024		

Name of test	Syllabus for Tests	Proposed Date	Actual Date	Remarks
Class Test -1	Unit-1 and 2	13-09-2024		
Class Test -2	Unit 3,4 and 5 (till date)	15-10-2024		
House Test - 1	unit 1-5	12-13-14 nov		

(Signature of Teacher)

(Signature of HOD)

Approved

Principal
Govt. Polytechnic for Women
Rehan Distt. Kangra (H.P.)