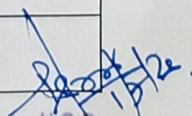


LESSON PLAN: **CEPC309 PR:3 Design of RCC structures Lab** FOR THE SESSION, 2026-27(WINTER-2026) BATCH-2024-27, GOVT. POLYTECHNIC,KANDHMAL

Discipline: Civil Engineering	Semester: 5th	Name of the Teaching Faculty : PRITHIRANJAN PRIYADARSHI PATRO, Sr. Lecturer in Civil Engg. ,Subrat Kumar Behera, LAB Asst. in Civil Engg.
Subject: CEPC309 PR:3 Design of RCC structures Lab	No. of days/ per week class allotted: 4	Semester From Date : 1/07/2026 to Date: 5/11/2026 No. of Weeks: 15
Week	Class Day	Theory/ Practical Topics
1st	1st	Module I – AutoCAD Drawing of Reinforced Concrete Members (16 Periods)-Course Introduction -Course objectives, laboratory rules, introduction to RCC detailing
	2nd	Review of RCC Fundamentals- Types of reinforcement, beam behavior, cover, reinforcement symbols
	3rd	AutoCAD Setup -Layers, units, templates, drawing standards
	4th	Singly Reinforced Beam -Theory of stress and strain distribution
2nd	1st	Practical 1 -Draw cross-section of singly reinforced beam using AutoCAD
	2nd	Practical 1 -Draw stress diagram for singly reinforced beam
	3rd	Practical 1 -Draw strain diagram for singly reinforced beam
	4th	Practical 1 -Dimensioning and annotation
3rd	1st	Doubly Reinforced Beam -Theory and reinforcement arrangement
	2nd	Practical 1 - Draw cross-section of doubly reinforced beam
	3rd	Practical 1 - Draw stress diagram of doubly reinforced beam
	4th	Practical 1 -Draw strain diagram of doubly reinforced beam
4th	1st	Practical 1 -Final detailing and reinforcement notation
	2nd	Editing & Plotting- Layers, text, hatching, plotting
	3rd	Drawing Verification -Corrections and discussion
	4th	Practical Assessment -Drawing submission and viva
5th	1st	Module II – RCC Footings and Structural Drawings (14 Periods)-Types of Footings-Isolated, Combined, Strap, Raft, Pile footing
	2nd	Practical 2 -Sketch isolated footing
	3rd	Practical 2 -Sketch combined footing
	4th	Practical 2 -Sketch strap footing
6th	1st	Practical 2 -Sketch raft footing
	2nd	Practical 2 - Sketch pile footing
	3rd	Introduction to RCC Structural Drawings -Reading structural drawings

	4th	Beam Reinforcement Drawing- Interpretation of detailing
7th	1st	Column Reinforcement Drawing- Interpretation of detailing
	2nd	Slab Reinforcement Drawing- Interpretation of detailing
	3rd	Staircase Reinforcement Drawing- Interpretation of detailing
	4th	Footing Reinforcement Drawing -Interpretation of detailing
8th	1st	Practical 3- Interpretation of complete structural drawing
	2nd	Practical Assessment- Submission and viva
		Module III – Reinforcement Checklist and Site Visit (14 Periods)-
	3rd	Reinforcement Inspection-Site requirements and quality checks
	4th	Beam Reinforcement Checklist- Preparation using drawings
9th	1st	Column Reinforcement Checklist- Practical exercise
	2nd	Slab Reinforcement Checklist- Practical exercise
	3rd	Footing Reinforcement Checklist- Practical exercise
	4th	Staircase Reinforcement Checklist -Practical exercise
10th	1st	Checklist Compilation- Combined reinforcement checklist
	2nd	Site Visit Orientation- Objectives, safety precautions
	3rd	Site Visit- Observation of reinforcement in beams and slabs
	4th	Site Visit- Observation of columns and footings
11th	1st	Site Visit- Observation of staircase reinforcement
	2nd	Report Preparation- Data collection and photographs
	3rd	Practical 5- Preparation of detailed site visit report
	4th	Assessment- Report evaluation and viva
		Module IV – STAAD.Pro Modelling, Analysis and Design (16 Periods)-Introduction to STAAD.Pro-Interface and workflow
12th	1st	Modelling Basics- Nodes, beams and supports
	2nd	Material Properties- Concrete grades and sections
	3rd	Load Definition- Dead load, live load and load combinations
	4th	Load Definition- Dead load, live load and load combinations
13th	1st	Practical 6- Model a simply supported RCC beam
	2nd	Practical 6- Assign supports and loads
	3rd	Practical 6- Run structural analysis
	4th	Results Interpretation- Shear force and bending moment diagrams
14th	1st	Beam Design- RCC beam design commands
	2nd	Reinforcement Details- Review of design output
	3rd	Design Optimization- Section modification
	4th	Report Generation- Design reports and printouts
15th	1st	Model Verification- Error checking and corrections
	2nd	Mini Project- Complete beam modelling and design
	3rd	Project Presentation- Discussion of modelling results
	4th	Final Practical Examination- Viva, project submission and evaluation


 H.O.D.
 Dept. of Civil Engg.
 Govt. Polytechnic
 Kandhamal