LESSON PLAN OF **CEPC215 PR:3 Geotechnical Engineering Lab..** FOR THE SESSION 2026-27(WINTER-2026) BATCH-2025-28, GOVT. POLYTECHNIC,KANDHAMAL

Discipline: **civil engineering**	Semester: **3rd**	Name of the Teaching Faculty: **Sweet Revelen Pradhan, GF in Cvil Engg,Subrat Kumar Behera, LAB Asst. in Civil Engg.**
Subject: **CEPC215 PR:3 Geotechnical Engineering 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 (as per Blooms Taxonomy)**
1st	1st	**Introduction to Soil Mechanics Laboratory-**Laboratory safety, equipment, IS codes, course outcomes
	2nd	**Soil Sampling-**Types of soil samples, sample preparation and preservation
	3rd	**Water Content Test-** Theory, IS 2720 (Part II), apparatus
	4th	**Water Content Test -** Demonstration
2nd	1st	**Water Content Test** -Practical, calculations and report writing
	2nd	**Specific Gravity Test-**Theory, IS 2720 (Part III)
	3rd	**Pycnometer Method-**Demonstration
	4th	**Specific Gravity Test-** Practical, calculations and interpretation
3rd	1st	**Field Density Tests-** Introduction and comparison of methods
	2nd	**Core Cutter Method -**Theory, IS 2720 (Part XXIX)
	3rd	**Core Cutter Test -** Practical in field/laboratory
	4th	**Calculations & Discussion-** Dry density determination
4th	1st	**Sand Replacement Method-** Theory, IS 2720 (Part XXVIII)
	2nd	**Sand Replacement Test-**Demonstration
	3rd	**Sand Replacement Test-**Practical, calculations and comparison
	4th	**Atterberg Limits-**Introduction and significance
5th	1st	**Liquid Limit Test-** Theory, IS 2720 (Part V)
	2nd	**Liquid Limit Test-**Practical
	3rd	**Plastic Limit Test-**Practical
	4th	**Plasticity Index-**Calculations and soil classification
6th	1st	**Shrinkage Limit-** Theory, IS 2720 (Part V)
	2nd	**Shrinkage Limit Test-**Practical
	3rd	**Shrinkage Calculations-**Result interpretation
	4th	**Grain Size Analysis** -Theory and applications
7th	1st	**Mechanical Sieve Analysis-**Demonstration
	2nd	**Sieve Analysis-**Practical
	3rd	**Grain Size Distribution** -Plotting gradation curve and calculations
	4th	**Soil Classification-** Interpretation using gradation data
8th	1st	**Field Identification of Soils-**Visual inspection and classification
	2nd	**Dry Strength Test-**Practical
	3rd	**Dilatancy Test** -Practical
	4th	**Toughness Test-**Practical and soil classification
9th	1st	**Permeability of Soil** -Theory and applications
	2nd	**Constant Head Test-** Theory, IS 2720 (Part XVII)
	3rd	**Constant Head Test-** Practical
	4th	**Constant Head Test** -Calculations and report
10th	1st	**Falling Head Test-**Theory
	2nd	**Falling Head Test** -Practical
	3rd	**Falling Head Test-**Calculations and comparison
	4th	**Shear Strength of Soil-** Introduction and engineering significance
11th	1st	**Direct Shear Test-**Theory, IS 2720 (Part XIII)
	2nd	**Direct Shear Test-** Practical
	3rd	**Direct Shear Test-**Calculations and interpretation
	4th	**Vane Shear Test-** Theory and demonstration
12th	1st	**Vane Shear Test-**Practical

	2nd	**Triaxial Shear Test-** Theory and apparatus
	3rd	**Triaxial Shear Test-** Demonstration and observations
	4th	**Triaxial Test-**Calculations and comparison of shear tests
13th	1st	**Compaction of Soil-**Theory and importance
	2nd	**Standard Proctor Test-**Practical, IS 2720 (Part VII)
	3rd	**Standard Proctor Test-** Determination of MDD and OMC
	4th	**Modified Proctor Test-**Practical
14th	1st	**Comparison of Compaction Tests** -Graph plotting and interpretation
	2nd	**California Bearing Ratio (CBR)-**Theory and significance
	3rd	**Field CBR Test-**Demonstration, IS 2720 (Part XVI)
	4th	**Field CBR Test-** Practical
15th	1st	**CBR Calculations-** Interpretation and pavement applications
	2nd	**Laboratory Record Completion** -Observation verification and report submission
	3rd	**Revision and Viva Voce-**Discussion of all experiments and troubleshooting
	4th	**Practical Examination-** Final practical test, viva voce and record evaluation

Sweet Reveleen Pradhan
Signature of Faculty

HOD
Department of Civil Engg.
Govt. Polytechinc ,Kandhamal