

GOVT. POLYTECHNIC MAYURBHANJ LESSON PLAN- 2026-27 (WINTER)

Discipline : CIVIL ENGG.		Semester: 3rd		Name of the Teaching Faculty : AMAN MOHANTY	
Subject : GE		No. of Days / per week class allotted : 03		Semester From date : 01.07.2026	To Date : 05.11.2026
MONTH	Week	Day	Unit	Topics	
JULY	1st	3rd	UNIT-I	Overview of Geology and Geotechnical Engineering	
		5th		Introduction of Geology, Branches of Geology, Importance of Geology for civil engineering structure and composition of earth	
	3rd	1st		Importance of Geology for civil engineering structure and composition of earth	
		3rd		Definition of a rock: Classification based on their genesis (mode of origin), formation.	
		5th		Classification and engineering uses of igneous, sedimentary and metamorphic rocks. (Concepts only)	
		1st		Classification and engineering uses of igneous, sedimentary and metamorphic rocks. (Concepts only)	
		3rd		Importance of soil as construction material in Civil engineering structures and as foundation bed for structures. (Concepts only)	
		5th		Field application of geotechnical engineering for foundation design, pavement design,	
	4th	1st	UNIT-II	Design of earth retaining structures, design of earthen dam. (Concepts only)	
		3rd		Physical and Index Properties of Soil	
		5th		Soil as a three phase system, water content	
	5th	1st		Determination of water content by oven drying method as per BIS code, void ratio	
		3rd		Porosity and degree of saturation, density index., air Content, Percentage of air voids, Relation between the parameters	
		5th		Unit weight of soil mass – bulk unit weight, dry unit weight, unit weight of solids, saturated unit weight, submerged unit weight	
		1st		Problems on interrelationship between parameters	
		3rd		Problems on interrelationship between parameters	
		5th		Determination of bulk unit weight and dry unit weight by core cutter and sand replacement method	
AUGUST	2nd	1st		Determination of specific gravity by pycnometer	
		3rd		Consistency of soil, Atterberg limits of consistency: Liquid limit,	
		5th		plastic limit and shrinkage limit. Plasticity index	
	3rd	1st		Particle size distribution test and plotting of curve	
		3rd		Determination of effective diameter of soil, well graded and uniformly graded soils,	
		5th		BIS classification of soil	
	4th	1st	UNIT-III	Permeability and Seepage	
		3rd		Definition of permeability, Darcy's law of permeability	
		5th		coefficient of permeability	
		1st		Factors affecting permeability, determination of coefficient of permeability by constant head and falling head tests	
		3rd		simple problems to determine coefficient of permeability	
	5th	5th		Birthday of Prophet Mohammad	
		1st		Seepage through earthen structures	
		3rd		seepage velocity, seepage pressure, phreatic line, flow lines, application of flow net, (Concepts only No numerical problems), Effective	
	1st	3rd		JANMASTAMI	
		5th		Compaction, Consolidation and stabilization of soil	

SEPTEMBER	2nd	1st	UNIT-IV	Concept of compaction, Standard and Modified proctor test as per IS code
		3rd		Plotting of Compaction curve for determining: Optimum moisture content (OMC), maximum dry density (MDD), Zero air voids line.
		5th		Factors affecting compaction
	3rd	1st		1st Internal Assessment
		3rd		GANESH PUJA
		5th		NUAKHAI
	4th	1st		field methods of compaction – rolling, ramming and vibration
		3rd		Consoildation,Difference between compaction and consolidation
		5th		Terzaghi's Model analogy of compression/springs showing the process of consolidation,Field implications
	5th	1st		Concept of soil stabilization, necessity of soil stabilization, different methods of soil stabiliza tion. California bearing ratio (CBR) test -
		3rd		Meaning and Utilization in Pavement Construction
		5th		Necessity of site investigation and soil exploration: Types of exploration, criteria for decidingthe location and number of test pits and bores.
OCTOBER	1st	5th	UNIT-V	Field identification of soil – dry strength test, dilatancy test and toughness test.
		1st		Gandhi Jayanti
		3rd		Shear Strength of Soil
	2nd	1st		Shear failure of soil-General, local and punching shear,
		3rd		Concept of shear strength of soil.
		5th		Components of shearing resistance of soil – cohesion, internal friction. Mohr-Coulomb failure theory
	3rd	1st		Strength envelope
		3rd		Strength equation for purely cohesive and cohesion less soils
		5th		Direct shear, triaxial and vane shear test laboratory methods.
	4th	1st	UNIT-VI	Bearing Capacity of Soil and Foundation
		3rd		Bearing capacity and theory of earth pressure. Concept of bearing capacity, ultimate bearing capacity,
		5th		MAHA NAVASMI
	5th	1st		Safe bearing capacity and allowable bearing pressure. Introduction to Terzaghi's analysis and assumptions, effect of water table on bearing
		3rd		2nd Internal Assessment
		5th		Field methods for determination of bearing capacity – Plate load and Standard Penetration Test. Test procedures as per IS:1888 & IS:2131
NOVEMBER	1st	1st		Rankine's theory and assumptions made for non- cohesive Soils
		3rd		Definition of earth pressure, Active and Passive earth pressure for no surcharge condition, coefficient of earth pressure
		5th		
	1st	1st		Type of foundations-shallow,deep foundation
		3rd		PREVIOUS YEAR QUESTION DISCUSSION

Subject Expert
(Civil Engg.)

HOD,Civil Engg.

Academic Co-ordinator