

**BHUBANANANDA ODISHA SCHOOL OF ENGINEERING, CUTTACK
DEPARTMENT OF CIVIL ENGINEERING**



LESSON PLAN

SUBJECT: GEOTECHNICAL ENGINEERING (TH2)

FACULTY: SRI KANIT PALAKIA

ACCADEMIC SESSION: 2022-23

SEMESTER: 3RD

SEC: C

Sd/-
H O D (Civil Engg.)

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LESSON PLAN

Discipline: Civil Engineering	Semester: 3rd C	Name of the teaching faculty: Sri Kanit Palakia	
Subject: Geotechnical Engg. (TH2)	No of days per week class allotted: 04 periods/week (Tue, Wed, Fri and Sat -1 period each)	Semester : From date: 15-09-2022 to date : 22-12-2022 No of weeks: 14 weeks	
Week	Class Day	No of period available	Theory/Practical topic
1 st	16-09-2022	1	1.1 Soil and Soil Engineering 1.2 Scope of Soil Mechanics
	17-09-2022	1	1.3 Origin and formation of soil
2 nd	20-09-2022	1	2.1 Soil as a three Phase system
	21-09-2022	1	2.2 Water Content, Density, Specific gravity
	23-09-2022	1	2.2 Voids ratio, Porosity, Percentage of air voids, air content, degree of saturation
	24-09-2022	1	2.2 density Index, Bulk/Saturated/dry/submerged density
3 rd	27-09-2022	1	Interrelationship of various soil parameters
	28-09-2022	1	Discuss previous year questions
	30-09-2022	1	3.1 Water Content 3.2 Specific Gravity
	01-10-2022	1	3.3 Particle size distribution: Sieve analysis
4 th	11-10-2022	1	3.3 wet mechanical analysis, particle size distribution curve and its uses
	12-10-2022	1	3.3 wet mechanical analysis, particle size distribution curve and its uses
	14-10-2022	1	3.4 Consistency of Soils, Atterberg's Limits
	15-10-2022	1	3.4 Plasticity Index, Consistency Index , Liquidity Index, Indices
5 th	18-10-2022	1	Discuss previous year questions
	19-10-2022	1	Class Test
	21-10-2022	1	4.1 General
	22-10-2022	1	4.2 I.S. Classification of soil
6 th	25-10-2022	1	4.2 I.S. Classification of soil
	26-10-2022	1	Plasticity chart
	28-10-2022	1	Discuss previous year questions
	29-10-2022	1	5.1 Concept of Permeability
7 th	01-11-2022	1	5.1 Darcy's Law, Co-efficient of Permeability
	02-11-2022	1	5.2 Factors affecting Permeability
	04-11-2022	1	5.3 Constant head permeability and falling head permeability Test

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	05-11-2022	1	5.4 Seepage pressure, effective stress, phenomenon of quick sand.
8 th	09-11-2022	1	Discuss previous year questions
	11-11-2022	1	6.1 Compaction: Compaction, Light and heavy compaction Test
	12-11-2022	1	6.1 Optimum Moisture Content of Soil, Maximum dry density, Zero air void line
	15-11-2022	1	Internal assessment
9 th	16-11-2022	1	Internal assessment
	18-11-2022	1	6.1 Factors affecting Compaction
	19-11-2022	1	6.1 Field compaction methods and their suitability 6.2 Consolidation: Consolidation
	22-11-2022	1	6.2 Distinction between compaction and consolidation. 6.2 Terzaghi's model analogy of compression/ springs showing the process of consolidation – field implications
10 th	23-11-2022	1	6.2 Terzaghi's model analogy of compression/ springs showing the process of consolidation – field implications
	25-11-2022	1	Discuss previous year questions
	26-11-2022	1	7.1 Concept of shear strength
	29-11-2022	1	7.1 Mohr- Coulomb failure theory, Cohesion, Angle of internal friction.
11 th	30-11-2022	1	7.1 strength envelope for different type of soil.
	02-12-2022	1	7.1 Measurement of shear strength- Direct shear test, triaxial shear test.
	03-12-2022	1	7.1 unconfined compression test and vane-shear test.
	06-12-2022	1	Discuss previous year questions
12 th	07-12-2022	1	8.1 Active earth pressure, Passive earth pressure, Earth pressure at rest.
	09-12-2022	1	8.2 Use of Rankine's formula for the following cases (cohesion-less soil only) (i) Backfill with no surcharge
	10-12-2022	1	8.2 Use of Rankine's formula for the following cases (cohesion-less soil only) (ii) backfill with uniform surcharge
	13-12-2022	1	Class Test
13 th	14-12-2022	1	9.1 Functions of foundations, shallow and deep foundation, different type of shallow and deep foundations with sketches.
	16-12-2022	1	Types of failure (General shear, Local shear & punching shear)
	17-12-2022	1	9.2 Bearing capacity of soil, bearing capacity of soils using Terzaghi's formulae & IS Code formulae for strip, Circular and square footings. Effect water table on bearing capacity of soil.
	20-12-2022	1	9.3 Plate load test and standard penetration test.
14 th	21-12-2022	1	Discuss previous year questions