

LESSON PLAN

Discipline: Drilling Engineering			Semester: 5th semester	Name of the Teaching Faculty: SABYASACHI BISWAL
Subject: Engineering Geology – III Sub No: Th.3			No of days /week class allotted: 04	Semester from Date: 15/09/2022 to 22/12/2022 No of weeks: 15
Month	Week	No of periods available	Class Day	Theory topics to be covered
SEPTEMBER	1 st	02	15.09.2022	Briefing about the syllabus Geology of Soils Introduction about soil and its formation Define soil and the various types of soils
			16.09.2022	Soil Forming process and factors <u>Types of soil</u> <ul style="list-style-type: none"> • Residual soil • Transported soil
	2 nd	04P	19.09.2022	Soil profile/horizons, Soil mineralogy
			20.09.2022	<u>Engineering properties of soils</u> ; Introduction, Specific gravity, particle size analysis, particle size distribution curve.
			22.09.2022	<u>Engineering properties of soils</u> ; Permeability, shear strength, cohesion, capillarity, moisture content Atterberg limits, compaction.
			23.09.2022	Groundwater Engineering What is groundwater& origin of groundwater.
	3 rd	4P	26.09.2022	Occurrence of groundwater & Hydrological cycle
			27.09.2022	<u>Vertical distribution of groundwater.</u> Zone of aeration
			29.09.2022	<u>Vertical distribution of groundwater.</u> Zone of saturation and water table.
			30.09.2022	Types of water bearing formation, Aquifer and its types. Aquiclude, aquifuge and aquitard.
OCTOBER	4 th	4P	10.10.2022	Aquiclude, aquifuge and aquitard.
			11.10.2022	Monthly Test-01
			13.10.2022	Porosity and its types and factors controlling porosity.
			14.10.2022	Permeability and its types.
	5 th	4P	17.10.2022	What is safe yield and overdraft, Impacts of overdraft on environment.
			18.10.2022	What is artificial recharge and why it is needed.
			20.10.2022	Methods of artificial recharge, Direct methods; surface methods, sub-surface method.

			21.10.2022	Methods of artificial recharge, Indirect method.
	6 th	4P	25.10.2022	Monthly test results and discussion.
			27.10.2022	Engineering geology Engineering properties of rocks; Use of rocks in Engineering projects, what are the various engineering properties of rocks.
			28.10.2022	<u>Engineering properties of rocks;</u> Crushing strength, transverse strength, shear strength, Tensile strength, porosity & its types, permeability & its type.
			31.10.2022	<u>Engineering properties of rock;</u> Absorption value, density, abrasive resistance, frost & fire resistance, modulus of deformation.
	7 th	3P	1.11.2022	What is dam, terminology associated with dam.
			3.11.2022	Different types of Dams.
			4.11.2022	Criteria for selection of dam site. Reservoir and describe the criteria for selection of a Reservoir site.
	8 th	3P	7.11.2022	Describe the geology of bridge sites. What is bridge and terminology associated with it and its type.
			10.11.2022	Describe the geology of bridge sites. Forces acting on bridge and criteria for site selection
			11.11.2022	Describe the geology of tunnel sites. What is a tunnel and its constructional features.
	9 th	4P	14.11.2022	Describe the geology of tunnel sites. Criteria for site selection.
			15.11.2022	Revision and Doubt Clearing class.
			17.11.2022	Internal Assessment/Class Test
			18.11.2022	
	10 th	4P	21.11.2022	Formation of ore deposits What is ore, gangue, tenor & grade with example.
			22.11.2022	CLASS TEST RESULTS AND DISCUSSION Introduction about different process of formation ore deposits
			24.11.2022	<u>Magmatic concentration deposits</u> What are magmatic concentration deposits, early magmatic deposits.
			25.11.2022	<u>Magmatic concentration deposits</u> late magmatic deposits.
	11 th	2P	28.11.2022	<u>Hydrothermal deposits</u> Hydrothermal solutions, how these are deposited, classification based on temperature of deposition.

DECEMBEER			29.11.2022	Hydrothermal deposits Classification based on mode of formation, cavity filling deposits. Replacement deposits and doubt clearing.
	12 th	2P	01.12.2022	Monthly Test-02
			02.12.2022	Sedimentation process helps in formation of mineral deposits. How the sedimentation occurs and how it helps in ore formation.
	13 th	4P	05.12.2022	Monthly test results and discussion. Contact metasomatism; how these processes help in ore deposits with example.
			06.12.2022	Pegmatite; what are pegmatite and how these are the store house of minerals.
			08.12.2022	Oxidation and supergene enrichment process
			09.12.2022	How the process occurs, zone of oxidation, supergene enrichment with examples.
	14 th	4P	12.12.2022	<u>Residual and mechanical concentration deposits</u> What are residual deposits and how these are formed with example
			13.12.2022	<u>Residual and mechanical concentration deposits.</u> How the mechanical concentration occurs,
			15.12.2022	Placers and its types. <ul style="list-style-type: none"> • ALLUVIAL PLACER • EOLIAN PLACER • BEACH PLACER • STREAM PLACER
			16.12.2022	Placers and its types. <ul style="list-style-type: none"> • ELUVIAL PLACER • RESIDUAL PLACER • COLLUVIAL PLACER
	15 th	3P	19.12.2022	Revision.
			20.12.2022	DOUBT CLEARING CLASSES.
			22.12.2022	Very Similar Test

verified

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14/09/2022

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