

Discipline: Drilling Engineering	Semester: 5th Semester	Name of the Teaching Faculty: Er. Brushabhanu Sahoo, Lecturer Stage-I	
Subject(Theory): DRILLING FLUID AND CEMENTING TECHNOLOGY Subject Code: DEPC303	No. of Periods /week: 03	Session: 2026-27 (Winter 2026) No. of weeks: 15 Semester from date 01.07.2026 to 05.11.2026	
Week	Class Day	Theory Topics	Remarks
1 st	1 st	Drilling Fluid Characteristics: Basic functions of drilling fluids.	
	2 nd	Properties of drilling fluids.	
	3 rd	Properties of drilling fluids.	
2 nd	1 st	Maintenance, additives and treatments of drilling fluids.	
	2 nd	Maintenance, additives and treatments of drilling fluids.	
	3 rd	Classification, Types and applications of drilling fluids.	
3 rd	1 st	Classification, types and applications of water based drilling fluids.	
	2 nd	Classification, types and applications of emulsion drilling fluids.	
	3 rd	Classification, types and applications of polymer based drilling fluids.	
4 th	1 st	Classification, types and applications of surfactant based drilling fluids.	
	2 nd	Classification, types and applications of foam based and aerated drilling fluids drilling fluids.	
	3 rd	Classification, types and applications of synthetic oil based drilling fluid (SOBM) fluids.	
5 th	1 st	Classification, types and applications of non-damaging drilling fluids.	
	2 nd	Clay chemistry and its application to drilling fluids.	
	3 rd	Clay chemistry and its application to drilling fluids.	
6 th	1 st	Types of clays, hydration, flocculation, aggregation and dispersion.	
	2 nd	Types of clays, hydration, flocculation, aggregation and dispersion.	
	3 rd	Types of clays, hydration, flocculation, aggregation and dispersion.	
7 th	1 st	Rheology of drilling fluids. Drilling fluid calculations: Slip Velocity, mud weight, additives.	
	2 nd	Rheology of drilling fluids. Drilling fluid calculations: Slip Velocity, mud weight, additives.	
	3 rd	Rheology of drilling fluids. Drilling fluid calculations: Slip Velocity, mud weight, additives.	
8 th	1 st	Rheology of drilling fluids. Drilling fluid calculations: Slip Velocity, mud weight, additives.	
	2 nd	Advancement in drilling fluid technology.	
	3 rd	Advancement in drilling fluid technology.	
9 th	1 st	New generation drilling fluids.	
	2 nd	New generation drilling fluids.	
	3 rd	Objectives of cementing.	
10 th	1 st	Oil well cements, classification of cement.	
	2 nd	Oil well cements, classification of cement.	
	3 rd	Slurry design, slurry additives, factors influencing cement slurry design.	
11 th	1 st	Slurry design, slurry additives, factors influencing cement slurry design.	
	2 nd	Cementing equipment.	
	3 rd	Cementing equipment.	
12 th	1 st	Primary cementing, stage cementing, liner cementing.	
	2 nd	Primary cementing, stage cementing, liner cementing.	
	3 rd	Plugging, squeeze cementing techniques in practice.	
13 th	1 st	Plugging, squeeze cementing techniques in practice.	
	2 nd	Deep well cementing.	
	3 rd	HPHT and deep water Cementing.	

14 th	1 st	HPHT and deep water Cementing.	
	2 nd	Cementing Calculations.	
	3 rd	Cementing Calculations.	
15 th	1 st	Cementing Calculations.	
	2 nd	Cementing Calculations.	
	3 rd	Cementing Calculations.	

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