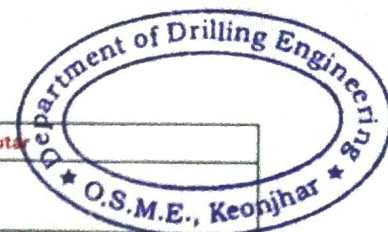


Department of Drilling Engineering
WINTER-2026, DRILLING MACHINERY-I Lesson Plan



Branch: DRILLING ENGINEERING			Faculty:- Er.Tapas Ranjan Sutar		
Subject: DRILLING MACHINERY-I / DEPC207		No of periods: 3hrs/week	Total Period: 45 Total week: 15	End Sem exam: 70	Progressive assesment: 30
Scheduled Session: WINTER-2026 (01.07.2026 to 05.11.2026), AVAILABLE PERIOD:50					
Month	Week	Period	Date	Topics	Total Periods/Remarks
JULY	1st	1P	01.07.2026	Briefing of Syllabus and Introduction to the course, its application	1
		I.Diamond Drilling Rig:			8
		1P	02.07.2026	Summarize general mechanical features of diamond drills.	
	2nd	1P	07.07.2026	Types and Specification of drill rig.Drill Rig rating capacity.	
		1P	08.07.2026	Sources of powers for diamond drill rig.	
		1P	09.07.2026	Power transmission.	
	3rd	1P	14.07.2026	Rig Hydraulics system.	
		1P	15.07.2026	Rotation, Feed mechanisms and their effectiveness.	
		1P	21.07.2026	Drilling Instruments.Solve problems relating capacity of rig to deploy for various depths to be drilled at different attitudes.	
	4th	1P	22.07.2026	Engine, Transmission maintenance.	
		II. Hoisting System:			6
		1P	23.07.2026	Derrick, Mast. Their application, construction and design.Explain the process of erection and dismantling of different types of derrick used in core drilling.	
	5th	1P	28.07.2026	Winch, types, application, Braking.	
		1P	29.07.2026	Wire rope, types, handling.	
AUGUST	2nd	1P	30.07.2026	Block and Tackle system.	
		1P	04.08.2026	Derrick efficiency and hoisting power calculation.	
		1P	05.08.2026	Daily. Weekly, Monthly and Yearly care and maintenance of derricks.	
	3rd	III. Drill String:			8
		1P	06.08.2026	Drill Rod, Pipes, Types, Application.	
		1P	11.08.2026	Factors affect drill string behaviour.	
	4th	1P	12.08.2026	Drill string failure and remedies, care of drill rod.	
		1P	13.08.2026	Casing, Types, Application.	
		1P	18.08.2026	Casing Drive and Accessories.	
	5th	1P	19.08.2026	RC drill string, RC hammer.	
		1P	20.08.2026	Core barrel: Types, construction, application, mechanism.	
		1P	25.08.2026	Core barrel: Types, construction, application, mechanism.	
SEPTEMBER	1st	IV. Core Barrels:			6
		1P	01.09.2026	State the different core barrels used in coring operation.	
		1P	02.09.2026	State the different sizes of core barrels.	
	2nd	Tentative 1st Internal Assesment in-between 01.09.2026 to 08.09.2026			
		1P	03.09.2026	Explain the design construction of core barrel of different series.	
		1P	08.09.2026	Explain the design construction of core barrel of different series.	
	3rd	1P	09.09.2026	State the field of application of S.T., different types of D.T. and T.T. wireline core barrels.	
		1P	10.09.2026	State the field of application of S.T., different types of D.T. and T.T. wireline core barrels.	
	4th	V.Bits:			6
		1P	17.09.2026	Types and designs of bits used in coring operation and their application.	
		1P	22.09.2026	Bit Manufacturing.	
	5th	1P	23.09.2026	Bit Selection.	
		1P	24.09.2026	Diamond bit cost.	
OCTOBER	1st	1P	29.09.2026	Reamer Shells, function, types.	
		1P	30.09.2026	Casing bit, shoe bit, differentiation.	
	2nd	VI. Circulating System:			6
		1P	01.10.2026	Outline of circulating system.	
		1P	06.10.2026	Circulating pump, types, working procedure.	
	3rd	1P	07.10.2026	Pump Drive, pump fittings and protection.	
		1P	08.10.2026	Pump capacity calculation.	
		1P	13.10.2026	Pump capacity calculation.	
	4th	1P	14.10.2026	Pump Maintenance.	
		VII. Auxiliary Equipment:			5
		1P	15.10.2026	Engine.Transmission.	
	5th	1P	21.10.2026	Compressor and air system.	
		1P	22.10.2026	Auxiliary equipment.Safe use and care of tools.	
		1P	27.10.2026	Electricity.	
NOVEMBER	1st	1P	28.10.2026	Automated and remote controlled drilling.	
		Tentative 2nd Internal Assesment in-between 26.10.2026 to 31.10.2026			
		1P	29.10.2026	Doubt Clearing/ Extra Class	
		1P	03.11.2026	Doubt Clearing/ Extra Class	
		1P	04.11.2026	Doubt Clearing/ Extra Class	
		1P	05.11.2026	Doubt Clearing/ Extra Class	

Prepared By: Er. Tapas Ranjan Sutar
Lect-II, Drilling

25-6-26
 Lecturer (Stage-II)
 Drilling Engineering
 O.S.M.E., Keonjhar

25-6-26
 PRINCIPAL
 Orissa School of Mining Engineering
 KEONJHAR