

# LESSON PLAN(WINTER-2023), DRILLING MACHINERY-I

Branch: <b>DRILLING ENGINEERING</b>				Faculty:- <b>Tapas Sutar</b>		
Subject: <b>Drilling Machinery-I (TH 02)</b>		No of periods: <b>4hrs/week</b>		Total Period: 60 Total week: 15		End Sem exam: 80 Internal assesment: 20
Scheduled Session: From <b>01.08.2023</b> to <b>30.11.23</b> (Available Period: 60)						
Month	Week	Date	Perlod	Topics to be covered		Remarks
A u g u s t	1st	01.08.23	2P	Briefing And Introduction		
				1.0 Diamond Drilling Rig		
		04.08.23	2P	1.1	Explain the general mechanical features of diamond drills.	
	2nd	08.08.23	2P	1.2	State the common technical specifications of diamond drills.	
		11.08.23	2P	1.3	State the different sources of powers for diamond drills and compare their merits and demerits.	
	3rd	18.08.23	2P			
	4th	22.08.23	2P	1.4	Explain the mechanism of transmitting power to hoisting drum and spindle for the rotary motion of drill string	
		25.08.23	2P	1.5	State the different feed mechanisms used in core drills and discuss their effectiveness.	
	5th	29.08.23	2P	1.6	Explain the feed mechanism of screw feed and hydraulic feed drill head.	
				1st Class Test		
S e p t e m b e r	1st	01.09.23	2P	1.7	Solve problems relating capacity of rig to deploy for various depths to be drilled at different attitudes.	
				2.0 Vibration in Diamond Drilling		
	2nd	05.09.23	2P	2.1	State the causes of vibration in diamond drill and suggest their remedies.	
				2.2	State the miscellaneous causes of vibration	
		08.09.23	2P	2.3	Explain the means of elimination of vibration due to rock formation.	
				2.4	State the effect of rod strength vibration on core recovery and diamond wear.	
				3.0 Derrick		
	3rd	12.09.23	2P	3.1	State the different types of derrick used in core drilling.	
		15.09.23	2P	3.2	Explain the construction and design of different derricks.	
	4th	22.09.23	2P	3.3	State the field of application of different derricks.	
	5th	26.06.23	2P	3.4	Explain the process of erection and dismantling of different types of derrick used in core drilling.	
				2nd Class Test		
O c t o b e r	1st	03.10.23	2P	3.5	State the daily. weekly, monthly and yearly care and maintenance of derricks.	
				4.0 Core Barrels		
		06.10.23	2P	4.1	State the different core barrels used in coring operation.	
	2nd			4.2	State the different sizes of core barrels.	
		10.10.23	2P	4.3	Explain the design construction of core barrel of different series.	
		13.10.23	2P	4.4	State the field of application of S.T., different types of D.T. and T.T. wireline core barrels	
				Internal Assesment		
				5.0 Core Bits		
	3rd	17.10.23	2P	5.1	State the different types and designs of bits used in coring operation.	
		20.10.23	2P	5.2	State the various sizes of diamond and T.C. bits.	
				5.3	Discuss the field of application of different bits.	
	5th	31.10.23	2P	5.4	State the function of Reamer Shells	
				5.5	Explain the use of Reamer Shell of different series.	

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N o v e m b e r	1st	03.11.23	2P	5.6	State the use of PCD bits.	
					6.0 Casing	
	2nd	07.11.23	2P	6.1	State the function of Casing.	
				6.2	Explain the casing requirement for the progress of hole depth.	
		10.11.23	2P	6.3	Enumerate the casing appliances.	
				6.4	State the general difficulties occurring in the lowering and recovering casings.	
	3rd	14.11.23	2P	6.5	State the general repairing works to be carried out for reused of old casings.	
		17.11.23	2P	6.6	State the different type of casing used in core drilling.	
				6.7	Differentiate F.C. Casing with F.J. Casing.	
					3rd Class Test	
					7.0 Fishing	
	4th	21.11.23	2P	7.1	What do you mean by fishing?	
				7.2	State the means of determining the position and condition of detached tools.	
		24.11.23	2P	7.3	How to calculate the depth of fish?	
	5th	28.11.23	2P	7.4	Enumerate the various fishing tools used in Diamond drilling for recovering the fish including hydraulic jar.	

  
 Prepared by:- Tapas Sutar, Lect

  
 HOD, DRILLING

  
 31.7.23  
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