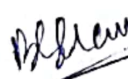



Discipline: <b>Drilling Engineering</b>	Semester: <b>6<sup>th</sup> Semester</b>	Name of the Teaching Faculty: <b>Er. Brushabhanu Sahoo</b>	
Subject(Theory): <b>OIL WELL DRILLING</b> Subject Code: <b>TH4</b>	No. of Periods /week: <b>04</b>	Session: <b>Summer 2022</b> No of weeks: <b>15</b>	
Week	Class Day	Theory Topics	Remarks
<b>1<sup>st</sup></b>	<b>1<sup>st</sup></b>	Introduction to oil well drilling and well planning. Function of oil or gas well.	
	<b>2<sup>nd</sup></b>	Objectives of well planning.	
	<b>3<sup>rd</sup></b>	Flow path for well planning.	
	<b>4<sup>th</sup></b>	Activities before start of drilling operation. Input data for well planning.	
<b>2<sup>nd</sup></b>	<b>1<sup>st</sup></b>	Geo-Technical Order and drilling program preparation.	
	<b>2<sup>nd</sup></b>	Important stages of construction and completion of oil wells.	
	<b>3<sup>rd</sup></b>	Considerations involved in developing the drilling program.	
	<b>4<sup>th</sup></b>	Salient features for preparation of oil well planning.	
<b>3<sup>rd</sup></b>	<b>1<sup>st</sup></b>	Preliminary arrangements at oil well drill site.	
	<b>2<sup>nd</sup></b>	Preliminary arrangements at oil well drill site.	
	<b>3<sup>rd</sup></b>	Explain the procedure of management technique to maintain camp, office, store, transport and communication.	
	<b>4<sup>th</sup></b>	Explain the procedure of management technique to maintain camp, office, store, transport and communication.	
<b>4<sup>th</sup></b>	<b>1<sup>st</sup></b>	Camp equipment required for establishment of drilling personnel.	
	<b>2<sup>nd</sup></b>	Camp equipment required for establishment of drilling personnel.	
	<b>3<sup>rd</sup></b>	Definition of core. State the general coring methods and equipment used in oil well drilling. Geological data from conventional cores.	
	<b>4<sup>th</sup></b>	Coring operation with conventional core barrel.	
<b>5<sup>th</sup></b>	<b>1<sup>st</sup></b>	Wire line coring. Explain core bits for core sampling.	
	<b>2<sup>nd</sup></b>	Advanced conventional coring tools.	
	<b>3<sup>rd</sup></b>	Side wall coring. Geological data from side wall coring. Advantages and limitations of side wall coring.	
	<b>4<sup>th</sup></b>	Coring operation with side wall coring device.	
<b>6<sup>th</sup></b>	<b>1<sup>st</sup></b>	Handling and sampling of core recovery.	
	<b>2<sup>nd</sup></b>	Routine core analysis and bulk volume determination.	
	<b>3<sup>rd</sup></b>	Definition of logging.	
	<b>4<sup>th</sup></b>	Purpose of well log.	
<b>7<sup>th</sup></b>	<b>1<sup>st</sup></b>	Explain conventional logging methods such as drillers log, cutting log, time log and mud log.	
	<b>2<sup>nd</sup></b>	Explain sample logs and mud logging.	
	<b>3<sup>rd</sup></b>	Basic principle of electric logging.	
	<b>4<sup>th</sup></b>	Explain self potential logging.	
<b>8<sup>th</sup></b>	<b>1<sup>st</sup></b>	Explain single point resistance logging.	
	<b>2<sup>nd</sup></b>	Explain resistivity logging.	
	<b>3<sup>rd</sup></b>	Explain natural gamma ray logging and neutron logging.	
	<b>4<sup>th</sup></b>	Explain caliper logging.	
<b>9<sup>th</sup></b>	<b>1<sup>st</sup></b>	Define drill stem testing.	

		Purpose of drill stem testing.	
	2 <sup>nd</sup>	Equipments for drill stem test.	
	3 <sup>rd</sup>	Basic test tool assembly.	
	4 <sup>th</sup>	General procedure of drill stem testing.	
10 <sup>th</sup>	1 <sup>st</sup>	General consideration in drill stem test.	
	2 <sup>nd</sup>	Explain straddle packer test and cone packer test.	
	3 <sup>rd</sup>	Explain wall over cone packer test and testing through perforations in the casing.	
	4 <sup>th</sup>	Test tool components and arrangement.	
11 <sup>th</sup>	1 <sup>st</sup>	Analysis of test data.	
	2 <sup>nd</sup>	Estimation of formation productivity	
	3 <sup>rd</sup>	Classification of the major categories of well completion.	
	4 <sup>th</sup>	State the field of application of open hole completion.	
12 <sup>th</sup>	1 <sup>st</sup>	Describe the methods of completion of open hole.	
	2 <sup>nd</sup>	State the field of application of conventional perforated method of well completion.	
	3 <sup>rd</sup>	Explain the various conventional casing perforated completion method of well activation.	
	4 <sup>th</sup>	Describe the process of Bullet perforating and Jet perforating.	
13 <sup>th</sup>	1 <sup>st</sup>	Compare and contrast Bullet perforating and Jet perforating methods of oil well development for penetration of multiple casing strings.	
	2 <sup>nd</sup>	Advantages of bullet perforation and jet perforation.	
	3 <sup>rd</sup>	Principal factors to be considered for perforated completions.	
	4 <sup>th</sup>	Problems occurred during production if sand will not be checked.	
14 <sup>th</sup>	1 <sup>st</sup>	Common methods employed for excluding sand and explain the technologies.	
	2 <sup>nd</sup>	State the primary advantages, technology and operational principle permanent completion.	
	3 <sup>rd</sup>	Factors to be considered for economical production and exploration of petroleum.	
	4 <sup>th</sup>	Factors to be considered for economical production and exploration of petroleum.	
15 <sup>th</sup>	1 <sup>st</sup>	Factors to be considered for economical production and exploration of petroleum.	
	2 <sup>nd</sup>	Silent features for reducing drill cost.	
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