

Faculty of Engineering & Technology

Drilling Engineering 1

Information :

Course Code : PE 305

Level : Undergraduate

Course Hours : 3.00- Hours

Department : Department of Petroleum Engineering

Instructor Information :

Title	Name	Office hours
Associate Professor	Taher El Sebaey Taher El Fakhry	7
Associate Professor	Taher El Sebaey Taher El Fakhry	7
Lecturer	Mohamed Ghareeb Moustafa Ahmed	
Assistant Lecturer	MOAMEN AHMED GASSER HASSAN KAMEL IBRAHIM KAMEL	
Teaching Assistant	Abdelrahman Adel Abdullah Abdelghany Kandil	
Teaching Assistant	AHMED NAGUIB ABDELAZIZ ABDELAZIZ GHONIM	
Teaching Assistant	Akram Rabie Hamed Ragheb Tobar	2
Teaching Assistant	Abdelrahman Adel Abdullah Abdelghany Kandil	

Area Of Study :

1. Understand the basic knowledge about the drilling operations.
2. Understand the different types of pressure encountered during of Drilling operations.
3. Enrich knowledge about the Drilling Fluid types and properties.
4. Understand the Rig types and Components.

Description :

This course covers basic Drilling Engineering necessary subjects that will guide the students to know types of Pressures, Drill string design, Drilling Bits, Hydraulics and Drilling Fluids as well as the initial knowledge of Drilling Operations.

Course outcomes :

a. Knowledge and Understanding: :

1 -	Describe the basis of Drilling Engineering data needs for Well Planning.
2 -	Discus the different types of Pressures and Temperatures.
3 -	Classify Drilling Rigs types (both Onshore and Offshore), Rig Systems and Rigs Power Design.
4 -	Describe the Basis of Drill String Design: Types and Techniques. Operationally how to prepare and run Bottom Hole Assemblies (BHA).
5 -	Select Drilling Bits: Types, Selections and Operationally how to select Optimum Types.
6 -	Classify Drilling Fluids: Function, Types, Properties, Contamination and Inhibitions.
7 -	Explain the Safety procedure during drilling " HSE".

b. Intellectual Skills: :

1 -	Apply Principles Techniques used in drilling.
2 -	Construct the different mud types desirable for different formations drilling.
3 -	Arrange the components of drilling Rigs.

c. Professional and Practical Skills: :

1 -	Evaluate the drilling fluid properties.
2 -	Select the suitable drilling bits.
3 -	Discuss the different pressure encountered during drilling.

d. General and Transferable Skills: :

1 -	Communicate effectively.
2 -	Lead and motivate individual.
3 -	Search for information and engage in long-life learning disciplines.

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Basis of Drilling Engineering needs for Well Planning	10	6	4
Basis of Well Design related to Pressures and Temperatures.	10	6	4
Drilling Rigs (both Onshore and Offshore), Rig Systems and Rigs Power Design	10	6	4
Basis of Drill String Design: Types and Techniques. Operationally how to prepare and run Bottom Hole Assemblies (BHA)	10	6	4
Drilling Bits: Types, Selections and Operationally how to select Optimum Parameters.	10	6	4
Drilling Hydraulics and Operationally how to design Optimum Hydraulic Program.	10	6	4
Drilling Fluids: Function, Types, Properties, Contamination and Inhibitions.	10	6	4
Safety for drilling " HSE"	5	3	2

Teaching And Learning Methodologies :

Lecturing
Tutorial
Laboratory

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
Assignments	10.00		
Final Exam	40.00		
Mid- Exam I	30.00	7	
Participation	10.00		

performance	10.00		
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Recommended books :

1. Drilling Engineering Workbook
 2. Drilling Manuals from Different Oil & Gas Companies Such as: Shell and ENI.
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