FUTURE UNIVERSITY IN EGYPT جامعة المستقبل

Faculty of Engineering & Technology

Intoduction to oil well drilling

Information :

Course Code :	PE 202	**Level :**	Undergraduate	**Course Hours :**	2.00- Hours

Department : Department of Petroleum Engineering

Instructor Information :

Title	Name	Office hours
Lecturer	Mohamed Alaa Eldin Mohamed Abdelbakey	2
Teaching Assistant	AHMED NAGUIB ABDELAZIZ ABDELAZIZ GHONIM	

Area Of Study :

The Main Goals of this course are preparing student to:
1. Review Drilling Rigs (both Onshore and Offshore), Rig Systems and Rigs Power Design.
2. Understand hole Sections.
3. Understand and calculate all types of pressure and temperature.
4. Design bottom hole assemblies.
5. Select drilling bits.
6. Introduction to drilling fluids: Functions, types and properties.
7. Safety for drilling " HSE"

Description :

This course covers basic Drilling Engineering necessary subjects that will guide the students to know Rig Types and Systems, Concept of Pressures, Drill string design, Drilling Bits, Drilling Techniques and Introduction to Drilling Fluids as well as the initial knowledge of Drilling Operations.

Course outcomes :

a.Knowledge and Understanding: :	
1 -	Describe the basics of Drilling Engineering for Well Planning
2 -	Explain the Well Design related to Pressures and Temperatures.
3 -	Describe the different drilling Rigs (both Onshore and Offshore), Rig Systems and Rigs Power Design
4 -	Describe the basics of Drill String Design: Types and Techniques. Operationally how to prepare and run Bottom Hole Assemblies (BHA).
5 -	Select drilling Bit: Types, Selections and Operationally how to select Optimum Parameters.
6 -	Summarize the problems related to Hole Sections
7 -	Classify the basics of drilling Fluids: Function, Types and Properties.
8 -	Describe safety for drilling " HSE"
b.Intellectual Skills: :	
1 -	Demonstrate principles and concepts in solving problems

2 -	Demonstrate of petroleum engineering software's
c.Professional and Practical Skills: :	
1 -	Use software in solving drilling problems
2 -	Plan of oil well Engineering
d.General and Transferable Skills: :	
1 -	Work in team
2 -	Communicate effectively

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Basis of Drilling Engineering needs for Well planning.planning.	3	2	1
Basis of Well Design related to Pressures and Temperatures.	6	4	2
Drilling Rigs (both Onshore and Offshore), Rig Systems and Rigs Power Design.	9	6	3
Basis of Drill String Design: Types and Techniques. Operationally how to prepare and run Bottom Hole Assemblies (BHA).	9	6	3
Drilling Bits: Types, Selections and Operationally how to select Optimum parameters.	6	4	2
Hole Sections.	6	4	2
Introduction to Drilling Fluids: Function, Types and Properties.	3	2	1
Safety for drilling "HSE".	3	2	1

Teaching And Learning Methodologies :

Interactive Lecturing
Discussion
Problem-based Learning
Reseach
Experiential Learning

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
Assignment	5.00		
Final Exam	40.00		
Lab Exper	10.00		
Mid- Exam 1I	15.00		
Mid- Exam I	15.00		
Oral Exam	5.00		
Quizzes	10.00	7	

Course Notes :
Handouts

Recommended books :
1. AMOCO, Shell and Eni Drilling Manuals; Drilling Engineering Series, 2014. 2. Halliburton Sperry sun / Baroid, Schlumbergeer and BHI field practical applications 3. Well Engineering design and new technologies (SPT, Oil and Gas Journal, Drilling tools etc.) 4. IWCF and UMM communities