Course Type	Course Code	Name of Course	L	T	P	Credit
DP	NPEC512	ADVANCED DRILLING SIMULATION LAB	0	0	3	1.5

Course Objective

Exposure of different aspects of Drilling system including well control techniques and laboratory scale simulation

Learning Outcomes

Uponsuccessfulcompletionofthiscourse,studentswill:

- Ability to handle critical situation of drilling problems such as kick control in Oil and gas fields

Exp. No.	Name of the Experiment	Contact Hours	Learning outcome
1.	Introduction to drilling simulator and it's components.	6	To learn about drilling simulator and components
2.	Drilling using drilling simulator to a certain depth and identification of drilling break.	3	To have handsome experience of drilling through simulator
3.	Kick control using drillers methods and kill sheet preparation in vertical wells.	3	To understand kick control in vertical wells
4.	Kick control using engineers method in a vertical well and kill sheet preparation.	3	To understand kick control in vertical wells
5.	Resolving kick using volumetric method in vertical well.	3	To understand kick control in vertical wells
6.	Resolving kick using concurrent method in vertical well. Evaluate the effect of differential sticking on drilling	6	To understand kick control in vertical wells
7.	Resolving the drilling problem when a choke is plugged.	3	To understand problems due to chokes
8.	Resolving a drilling problem when a choke is washout out.	6	To understand problems due to chokes
9.	Resolving a drilling problem when a bit nozzle is plugged.	3	To understand problems due to bit nozzles
10.	Resolving a drilling problem when the well is packed-off. Evaluate the effect of surge and swabbing on drilling.	6	To understand problems due to surging and swabbing
Total		**42**	

Text Books:

1. Applied Drilling Engineering, Adam T. Bourgoyne Jr. et al., SPE Text Book Series, 1991
2. Drilling Engineering: A Complete Well Planning and Approach, Neal J. Adams, Pennwell, 1985.

References:

1. Well Control Problems Solutions, Neal J. Adams, Pennwell, 1980
2. Oil Well Drilling Engineering: Principles and Practice, H Rabia, Springer, 1986 1. Raghu Ramkrishnan and Johannes Gehrke, “Database Management Systems”, TMH.