

Course Type	Course Code	Name of Course	L	T	P	Credit
DP4	PEC210	Drilling Simulation Lab	0	0	2	2

**Course Objectives:**

Exposure of different aspects of Drilling system and their laboratory scale simulation.

**Learning Outcomes:**

Ability to handle critical situation of drilling problems in Oil and gas fields.

**COURSE CONTENT:**

Exp. No.	Name of the Experiment	Contact Hrs
1.	Drilling a vertical well up to a certain depth using the various drilling systems such as the hoisting system and the rotary system.	2
2.	Calculation and monitoring of all the drilling parameters such as the drilling rate (rate of penetration, ROP), rotary speed, drill pipe pressure, casing pressure, mud weight etc.	2
3.	Setting up of a situation where a kick is induced into a well and fixing it using the driller's method (two circulation method). Preparation of a kill sheet.	2
4.	Resolving a kick using the wait of weight method (Engineer's method, one circulation method). Preparation of a kill sheet.	2
5.	Resolving a kick using the volumetric method. Preparation of a kill sheet.	2
6.	Resolving a kick using the concurrent method. Preparation of a kill sheet.	2
7.	Resolving the drilling problem when a choke is plugged.	2
8.	Resolving a drilling problem when a choke is washout out.	2
9.	Resolving a drilling problem when a bit nozzle is plugged.	2
10.	Resolving a drilling problem when the well is packed-off.	2
11.	Evaluate the effect of surge and swabbing on drilling.	2
12.	Evaluate the effect of differential sticking on drilling.	2
13.	Resolve all the remaining IADC (International Association of Drilling Contractors) and IWCF (International Well Control Forum) malfunctions.	2