

Course Type	Course Code	Name of Course	L	T	P	Credit
DC1	PEC201	Drilling Technology	3	0	0	9

**Course Objective**

The objective of the course is to provide basic knowledge related to drilling of oil and gas wells.

**Learning Outcomes**

Upon successful completion of this course, students will:

- have a broad understanding of well planning, drilling rig and its operating systems.
- have a conceptual knowledge of different types of well tubular and their specific uses in the system
- have analytical capability of problems to be encountered during drilling of the well and to take corrective measures.

Unit No.	Topics to be Covered	Lecture Hours	Learning Outcome
1	<b>Well Planning:</b> Introduction to oil well drilling, Drilling planning approaches.	6	Ability of proper planning of the well
2	<b>Rotary Drilling Method:</b> Rig parts, selection and general layout.	6	Knowledge of different operating system of drilling rig
3	<b>Drilling Operations &amp; Practices:</b> Hoisting, circulation, Rotation, power plants and Power transmission, Rig wire line system handling & storage. <b>Coring:</b> Different methods of coring	6	Knowledge of different operating system of drilling rig
4	<b>Well tubular:</b> Casing String and casing seat selection, Drill String.	6	Familiarity of different well tubular and their utility
5	<b>Drill Bits:</b> Classification and design criteria of drag, rotary, roller, diamond and PDC bits. <b>Bit Selection:</b> Conventional and Log based. Introduction to tri-axial loading, Well Head Equipment.	6	Ability of selection of proper bit compatible to the well
6	<b>Well Problems and Solutions:</b> Fatigue failure, Pipe sticking, Lost-circulation, Sloughing shale, Swabbing, surge, gas cap drilling. <b>Oil Well Fishing:</b> Fish classification, tools and techniques.	6	Ability to handle different type of drilling problems
7	<b>Well Kick, Blow out and Well Control methods</b>	6	Ability to handle the unbalanced pressure and to control the Blowout
	<b>Total contact hours:</b>	<b>42</b>	

**Text Books:**

- Petroleum Engineering: Drilling and Well Completion:
- Applied Drilling Engineering:
- Drilling Engineering: A complete Well Planning and approach.:

Carl Gatlin  
Adams T Bourgoyane  
Neal J.Adams

**Reference Books:**

- Well Control Problems Solutions :
- Oil Well Drilling :
- Oil Well Drilling Technology :

Neal A J.dams  
H Rabia  
Mc. Gray& Cole