

## **Course code and Title: PE-421 Well Testing**

### **Course Contents:**

#### **Introduction**

Objectives of well tests. Transient, steady state, pseudo steady state flow, wellbore storage and radius of investigation concept.

#### **Pressure Transient Testing**

Theory, graphical representation and interpretation of pressure draw down and build-up tests. Modification of the diffusivity equation for gas. Application of pseudo-pressure function, pressure square and pressure methods for analysis of gas well tests. Type curve matching. Superposition principle and pressure derivatives. Analysis of well tests affected by phase redistribution. Theory of injection, fall off, interference and pulse testing. Well testing of hydraulically fractured and naturally fractured Wells. Drill stem testing and analysis.

#### **Gas well Deliverability Testing**

Theory, graphical representation and interpretation of Flow-after flow, isochronal and modified isochronal tests.

Design and implementation of well tests.

#### **Text book**

1. John P. Spivey and W. John Lee, “Applied Well Test Interpretation”, SPE Textbook Series Vol. 13 ISBN: 9781613993071, 2013.

#### **Reference Book**

1. Tarek H. Ahmed and Paul D. McKinney “Advanced Reservoir Engineering”, 1st Edition, Gulf Professional Pub.ISBN : 9780750677332, 2005.