RESERVOIR MANAGEMENT RSE035

COURSE OVERVIEW

This course will cover the basic techniques used in modern reservoir management and reservoir monitoring. The reservoir management process with data analysis, reservoir dynamic modeling, and production operations will be discussed. Surface facilities, related project evaluations and economics will be covered. The class will also cover the general aspects of reservoir monitoring and planning.

COURSE OBJECTIVES

By the end of this course, participant will be able to:

- Understand the fundamental concepts and principles of reservoir management.
- Comprehend the reservoir management process and its components.
- Apply data analysis techniques for reservoir characterization and evaluation.
- Develop reservoir dynamic models for forecasting and production optimization.
- Implement effective reservoir monitoring strategies using new technologies.
- Evaluate and estimate reserves and resources through decline curve analysis.
- Conduct material balance equations and waterflooding design for enhanced oil recovery.
- Perform history matching and prediction for reservoir performance evaluation.
- Assess risk factors in reservoir management and make informed decisions.
- Apply economic indicators and models for project evaluations.
- Demonstrate a comprehensive understanding of petroleum reservoir management.

WHO SHOULD ATTEND

This course is intended for all reservoir, production, and operations engineers, geologists, geophysicists, managers, experienced technicians, and service company personnel responsible for improving the performance of petroleum reservoirs.

COURSE DURATION

5 Working Days

COURSE OUTLINES

1. Pre course evaluation

2. Fundamentals of Reservoir Management
   - Course Description and Objectives
   - Reservoir Management Overview
   - Reservoir Management Process
   - Reservoir Management Product
   - Reservoir Management Team
   - Reservoir Management during Field Stages
   - Reservoir Management Components

3. Fluid Flow In Porous Medium ,Reserves & DCA
   - Applications to Developed Fields
     - Diffusivity Equation
     - Radius of Investigation
     - Principle of Superposition
     - Horner's Approximation
   - Reserves/Resources Definition and Estimation
   - Decline Curve Analysis
     - Theory, Definition and Fundamentals
     - Examples
     - Forecasting

4. Pressure Transient Tools
   - Draw Down Test
   - Different Flow Regimes
   - Build-Up Test
   - Well Damage and Stimulation

5. MBE and Waterflooding
   - Material Balance Equation
     - Energy Sources
     - Aquifer Models
     - History Matching
     - Prediction
     - Analytical Vs. Numerical Methods

- Waterflooding
  - Design Aspects
  - Successful Waterflooding
  - Optimizing Waterflooding

6. **Reservoir Monitoring**
   - Role of New Technology in Reservoir Management
     - IOR/EOR
   - Risk Assessment
   - Petroleum Economics
     - Overview
     - PSC Components
     - Economic Indicators
     - Economic Model
7. **Post course evaluation**