

Basic Reservoir Engineering Course

Instructor: Ricardo Padron

Dates: March 7-8 from 9am - 4 pm

Location: 1001 Texas Av., suite 1200, Houston, TX 77002

Objectives:

The course offers non-reservoir engineer professional a better understanding of reservoir engineering practices, processes and limitations. The course provides people who are already well trained in other disciplines with an understanding of current state-of-the-art practice of reservoir engineering.

Participants will learn:

- The fundamentals and concepts of fluid flow in porous media.
- Physics principles of mass conservation energy supply in reservoirs.
- Vertical flow performance in wells.
- How reservoirs are characterized by fluid type and drive mechanisms.
- Hydrocarbon's phase behavior.
- Oil and gas reservoir pressure performance.
- Well architecture and completion.
- Production profile performance and decline.
- Production surface network system.
- Field development.

Content:

1. Reservoir Mechanisms

- A. Fluids Flow in Porous Media (Diffusivity Equation)
 - I. Flow Regimes
 - II. Reservoir Geometric Models
- B. Reservoir Drive Mechanisms
- C. Darcy's Law
- D. Pressure Transient Analysis (PTA)
- E. Material Balance
- F. Numerical Model (Reservoir Simulation)

2. Fluids Characterization

- A. Hydrocarbon Phase Behavior (Fluids Type)
- B. Oil / Gas Properties (PVT)
- C. Water and Rock Properties
 - I. Water Properties and Stiff Diagram
 - II. Rocks Compressibility and Wettability
 - III. Capillary Pressure IV. Relative Permeability

3. Fluids Flow/Well Flow Performance

- A. Well Types and Well Completions
- B. Vertical Flow Performance
- C. Surface Production Network

4. Reservoir Production Performance

- A. Production Decline Approach
- B. Others Empirical Approaches for Recovery Calculation
- C. Fractional Flow and Sweep Efficiency
- D. EOR Processes E. Field Development