Reservoir Modeling for Geologists & Engineers

Duration: 5 days

Date: November 04-08, 2024

Location: London, UK

Summary:

The key objectives of this course are to develop the skills needed for reservoir characterization and modeling and how to apply the most updated techniques for constructing 3D reservoir models. Both description and characterization tools for carbonate and clastic reservoirs including their geometry, connectivity, depositional environment, petrophysical properties and reservoir quality will be discussed in detail. Then the course will cover the techniques of integrating geological, and engineering data into high-resolution static model.

Course Contents:

- **Concepts of reservoir Studies**
    a) **Reservoir Description**
    b) **Reservoir Characterization**
    c) **Reservoir Modeling**
    d) **Reservoir Management**
- **Reservoir Life Cycle**
- **Data Needed for Reservoir Modeling Study**
- **Reservoir Characterization Tools**
    a) Seismic
    b) Logs

c) Cores

d) Well-Test

- **Reservoir Rocks**
  a) Depositional Settings
  b) Reservoir Quality and Types
  c) Reservoir Connectivity; areal and vertical
- **Reservoir Properties**
  a) Porosity
  b) Permeability
  c) Wettability
  d) Capillary Pressure
  e) Relative Permeability
- **Workshop on Reservoir Properties**
  a) Core Pore/Perm Cross Plots
  b) Capillary Pressure curves
  c) Pore Throat Size Technique
- **Reserve Estimates and Risk Analysis**
- **3D Modeling Techniques**
  a) Deterministic Reservoir Modeling
  b) Stochastic Modeling Techniques
- **Population of Reservoir Properties**
  a) Practical uses of geostatistics
  b) Cross plot, PDF and CDF (construction and interpretation)
  c) Spatial relationships between properties
  d) Variogram (building and interpretation)

e) Geostatistical algorithms

- **Characterizing & Modeling of Fractured reservoirs**
- **Post-Modeling Operations**
- **Up-Scaling Techniques**
- **Exporting Results to Simulation**
- **Case studies from Gulf region**