

Principles of Petroleum Geomechanics

Course Overview

The outline of the comprehensive programme is:

- Introduction to rock mechanics and rock mechanics testing
- Pore pressure and in-situ stresses, and construction of 1D geomechanical model
- Wellbore geomechanics including wellbore stability, drilling through shales and sand production
- Hydraulic fracturing, and compaction and subsidence
- Coupled reservoir geomechanics
- Geomechanical risks in CO₂ geological storage

Course Objectives

Participants' acquisition of improved knowledge competency at mid-level and above in Petroleum Geomechanics, and the practical application of acquired knowledge in real-world scenarios via latest technology case studies. The key aim is to promote knowledge transfer on the advanced technical subject with relevancy in role-specific skills development and transformative impact of geomechanics throughout life-of-field and successful delivery of CCS projects.

Day 1 – Fundamentals of Geomechanics & Rock Mechanics

- Geomechanics in the Oil & Gas Industry
- Introduction to Rock Mechanics
- Rock Mechanics Testing
- Pore Pressure and Fracture Gradient (Part 1)

Day 2 – In-Situ Stress & Geomechanical Model Development

- Pore Pressure and Fracture Gradient (Part 2)
- Pore Pressure (Major Exercise)
- In-Situ Stresses
- Geomechanical Model Construction & Validation

Day 3 – Wellbore Stability & Shale Geomechanics

- 1D Geomechanical Model (Major Exercise)
- Wellbore Geomechanics and Stability
- Drilling Through Shales

Day 4 – Sand Production & Hydraulic Fracturing

- Wellbore Stability (Major Exercise)
- Sand Production and Mitigation
- Hydraulic Fracturing in Intact & Fractured Formations

Day 5 – Compaction, Coupled Geomechanics & CO₂ Storage Risks

- 1D Compaction and Subsidence Prediction
- Coupled Reservoir Geomechanics
- Geomechanical Risks in CO₂ Geological Storage

Progress Tracking

Full course administration and participant tracking are included. Weekly progress updates provide clear visibility into participation, engagement, and overall progress.

Queries

Connect with enquiries@apes-energyevolution.com

