Petrogenium. Academy

Upstream (Reservoir Engineering)

Reservoir Engineering for Other Disciplines

Consultant / Trainer

Wim Swinkels/Thorsten Viertel

The Petrogenium (in collaboration with EPTS) Reservoir Engineering for Other Disciplines course participants will gain a comprehensive understanding of the fundamental concepts and practical methods used in reservoir engineering. The course focuses on the analysis and interpretation of subsurface and production data, enabling participants to optimize the economic production of hydrocarbons throughout all stages of field development

Participants

This **Petrogenium**. course is applicable for professionals with prior technical or engineering exposure to exploration and production activities. Targeted participants include new Reservoir Engineers, Production Engineers, Petrophysicists and Geoscientists involved with exploration and development of oil & gas reservoirs..

Learning Objectives

At the end of the course, participants will understand the physics of oil and gas fields, and have an awareness of modern reservoir engineering principles and practices for reservoir development and production, including the estimation of oil and gas reserves.

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Learning Objectives

Course content

- Reservoir rock properties.
- Capillary pressures, surface tension, wettability.
- Distribution of hydrocarbon fluids, pressure regimes, fluid gradients and contacts
- Hydrocarbons-in-place estimation,
- Reserves and resources estimation methods.
- Fluid properties and phase behaviour, PVT parameters, fluid sampling
- Recovery drive-energy, material balance, recovery factors and production forecasts.
- Gas reservoir engineering concepts.
- Radial flow equation and well behaviour
- Skin: source and how to minimize it.
- Well testing, pressure tests: drawdown and build-up.
- Reservoir modeling
- Production forecasting
- Relative permeability, movable oil, fluid displacement, mobility,
- Reservoir heterogeneity and sweep.
- EOR principles
- Field Development Planning

Programme

Day 1

Reservoir rock and volumes

1. Course Introduction, the Reservoir Engineering work flow, example case
2. Reservoir rock properties, permeability and fluid flow
3. Distribution of hydrocarbon fluids
4. Exercise: fluid gradients and contacts
5. Volumetric Oil in Place and Gas in Place calculations (STOIIP and GIIP)
6. Reserves basic principles
7. Exercise: Hydrocarbons in place estimation

Day 2

Fluid behaviour and Material Balance

1. Oil and gas, composition and phase behaviour
2. Reservoir fluid properties of oil and gas
3. Exercise PVT correlations for oil and gas
4. Drive Mechanisms
5. Oil Material Balance
6. Read and discuss: material balance field case

Why select Petrogenium.?

The above support will be provided by principal consultants with 30+ years world-class experience in the technology and hands-on know-how from operation of refinery units.

Because Experience Matters

Contact Petrogenium.:

Email: training@petrogenium.com
Website:https://www.petrogenium.com/training/

Programme

Day 3

Well behaviour and well tests

1. Gas Material Balance and applications
2. Exercise volumetric gas volume estimation, p/z plot
3. Wells, inflow performance, skin, horizontal wells
4. Exercise: use of well inflow calculations
5. Oil well testing, Pressure Draw Down and Build Up analysis
6. Decline Curve Analysis and Production forecasting
7. Exercise: production forecasting

Day 4

Displacement, sweep and reservoir modelling

1. Relative permeability and capillary pressure, movable oil
2. Displacement and Recovery, sweep, heterogeneity
3. Reservoir Simulation - Basic Principles
4. Reading and discussion of simulation field cases

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Day 5

Recovery and development planning

1. Recovery
2. Principles of Enhanced Oil Recovery
3. Field Development Planning
4. Exercise: development planning
5. Special topics
6. Course Recap, Quiz and evaluation

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