Training - Introduction to Reservoir Engineering

INFORES-EN-D | Distance only | 5 days

This course provides a general understanding of main Geosciences & Reservoir Engineering concepts and data used in multidisciplinary Oil & Gas fields development projects and the way these data and concepts are integrated

Level

Awareness

Public

Technicians, engineers, managers and Oil & Gas industry staff facing day-to-day Geosciences and Reservoir Engineering concerns

Objectives

Attendees will be able to implement the following skills:

- Describe the main steps of Oil & Gas fields exploration and development workflow
- Describe petroleum systems, reservoir rocks and the corresponding fundamental properties as well as the related techniques to get relevant information (core analysis, logs, well testing)
- Describe reservoir fluids and the corresponding fundamental properties
- Describe main reservoir production mechanisms and the related expected performance
- Describe the concepts of resources and reserves and the related concepts of risks and uncertainties and economical evaluation

Pedagogical & technical resources

- E&P and Reservoir Engineering workflow interactive presentation
- Interactive lectures, exercises and short movies
- Dynamic reservoir simulator overview

Assessment of achievements

- Trainees are assessed throughout the training through practical application phases and interactions with the trainer
- A final on-the-spot evaluation may also be carried out at the end of the course and/or at the end of each module using tests designed to verify the learners' understanding and assimilation of the knowledge linked to the training objectives

Prerequisites

No prerequisites are necessary to follow this course

Responsable

IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

E&P & RESERVOIR ENGINEERING WORKFLOW — 0.25 day

Introduction to E&P and reservoir engineering workflow through interactive work.

FUNDAMENTALS OF RESERVOIR CHARACTERIZATION — 1.25 days

Petroleum geology:

- Type of rocks.
- Hydrocarbon genesis.
- Petroleum systems.

Rock properties and petrophysics:

- Cores and coring operations.
- Porosity, permeability, saturations.
- Capillary pressure, wettability, relative permeability.

Well log interpretation:

- Logging operations and log environment (borehole, invasion profile).
- Fundamental equations for log interpretation in clean formations.
- Main open-hole logs. Quick-look qualitative interpretation technique.

Reservoir fluids properties (oil, gas, water):

- Fluids composition (hydrocarbons).
- Thermodynamics equilibrium. Phase envelope.
- Main PVT parameters: FVF, Rs, GOR, etc.

FUNDAMENTALS OF RESERVOIR ENGINEERING — 2 days

Well testing and well test analysis:

- Well and reservoir performance and the need for testing.
- Darcy's law, diffusivity equation and typical flow regimes.
- Productivity index, radius of investigation.
- Well test interpretation: pressure curves analysis, pressure derivative.

Drive mechanisms:

- Primary recovery: oil reservoirs (natural depletion, natural water drive) and gas reservoirs.
- Secondary recovery: water flooding, gas injection.
- EOR: miscible gas injection, chemical flooding, thermal flooding.

FUNDAMENTALS OF RESERVOIR SIMULATION — 0.5 day

Principles and objective of reservoir simulation:

- Reservoir simulation models - Building the models.
- Reservoir simulators - Black-oil, compositional, thermal, chemical, etc.

Reservoir simulation workflow.

- Data review. History match. Production forecast.

Introduction to a reservoir simulator:

- Data set review. Grid. Petrophysical data. PVT data. Wells and production constraints.
- Analyzing some simulation results on various reservoir models.

RESERVES DEFINITION & CLASSIFICATION — 0.5 day

Reserves and resources:

- Economics criteria.
- Risks and uncertainties.
- Reserves and resources definition and classification.

Oil & Gas reserves. Some figures.

Sessions

Classe virtuelle - From 11/02/2026 to 11/06/2026 **3650 €/HT**

To French entities : IFP Training is referenced to DataDock ; you may contact your OPCO about potential funding.
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