Training - Geological Characterization and Modeling - Integrated Workshop

IRCM-EN-P | Face-to-face only | 10 days

This course delivers comprehensive, practical training in the reservoir characterization and modeling workflow, with an intensive week of hands-on exercises on a case study. The workshop focuses on applying concepts directly in software to bridge the gap between static geological characterization and dynamic reservoir behavior

Level

Knowledge

Public

Geoscientists and reservoir engineers involved in multidisciplinary teams, willing to widen their knowledge in reservoir modeling

Objectives

Attendees will be able to implement the following skills:

- Provide a clear understanding of techniques and challenges related to reservoir modeling (focus on reservoir properties)
- Build required competencies for analyzing datasets and constructing reliable static model
- Emphasize reservoir modeling main goal: reduce subsurface uncertainties (reduce risk and optimize investments)

Pedagogical & technical resources

The course combines interactive lectures with practical, step by step exercises aimed at developing a 3D geological model using Petrel™, the industry-leading software for geomodelling.

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

INTRODUCTION — 0.5 day

Basic principles of reservoir characterization.
Working with scale.

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Overview of the geomodeling workflow.

SRUCTURAL MODELING — 1 day

Structural modeling concepts.
Gridding techniques (Pillar Grid & Volume-Based Approaches).

PROPERTY MODELING: DATA PREPARATION & ANALYSIS — 0.5 day

Data distribution analysis.
Blocking well data.
Vertical proportion curves (VPCs).
Stationarity concepts.

PROPERTY MODELING: DETERMINISTIC AND STOCHASTIC APPROACHES — 1 day

Deterministic methods review.
Kriging techniques.
Variogram modeling.
Sampling effects.
Simulation vs. estimation.

PROPERTY MODELING: DISCRETE AND CONTINUOUS PROPERTIES — 1 day

Facies modeling.
Fault seal analysis.
Petrophysical property modeling.

VOLUMETRICS AND UPSCALING — 0.5 day

Volume calculation.
Upscaling to the reservoir simulation grid.

UNCERTAINTY ANALYSIS — 0.5 day

Methods and workflow for uncertainty analysis.

APPLICATION ON SOFTWARE (PETREL™) — 5 days

Introduction and software discovery:

- Introduction to the Petrel™ interface and its geomodeling workflow.

Sructural modeling:

- Building the fault network.
- Defining the structural grid: Pillar gridding. Volume based modeling.
- Modeling horizons.

Property modeling: data preparation and analysis:

- Checking data distribution.
- Blocking well data to the grid.
- Creating VPCs and trend resources.
- Building variogram models.

Property modeling: deterministic and stochastic methods:

- Comparing kriging options.
- Removing sampling effects.

Property modeling: discrete and continuous property modeling:

- Facies modeling.
- Fault seal analysis.

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- Petrophysical property modeling.

Volumetrics & upscaling:

- Volume calculation.
- Upscaling to the reservoir simulation grid.

Uncertainty analysis:

- Conducting uncertainty analysis.

Sessions

Rueil-Malmaison - From 11/30/2026 to 12/11/2026 **8500 €/HT**

To French entities : IFP Training is referenced to DataDock ; you may contact your OPCO about potential funding.
Please contact our disabled persons referent to check the accessibility of this training program : referent.handicap@ifptraining.com

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