Fundamentals of Reservoir Geology

Overview

LEVEL
Skilled

PURPOSE
This course provides an in-depth understanding of reservoir geology, covering concepts as well as data reviewing and modeling.

LEARNING OBJECTIVES
Upon completion of the course, participants will be able to:
- discuss main concepts of reservoir geology, especially petrophysical concepts, used in the description of reservoirs and the way the corresponding rock properties are measured from cores,
- access to rock properties from log interpretation and compare to core measurements,
- define petro-facies, electro-facies and rock-types,
- integrate cores, logs and well tests data for reservoir modeling,
- apply the workflow for building a reservoir static model using dedicated software,
- identify and assess the uncertainties within the geomodeling workflow.

WAYS AND MEANS
Interactive lectures, exercises.
Hands-on practice using software dedicated to reservoir modeling (PETREL™ and EasyTrace™).
Software used during workshops: with courtesy of Beicip-Franlab and Schlumberger.

LEARNING ASSESSMENT
Knowledge assessment with multiple choice questions and open explanatory questions.

Agenda

INTRODUCTION TO RESERVOIR CHARACTERIZATION
Introduction to reservoir characterization:
Reservoir characterization and modeling objectives.
Reservoir characterization and modeling workflows.
Data and related uncertainty.
Data integration.
Reservoir architecture:
Seismic interpretation and pitfalls.
Well log analysis.
Facies analysis.
Rock-typing.
Petrophysics and rock properties.
Reservoir heterogeneities.

PETROPHYSICS - RESERVOIR PROPERTIES FROM CORES & LOGS EVALUATION
Reservoir properties from conventional and special core analysis:

RESERVOIR MODELING WORKSHOP