Advanced Certificate

Advanced Facies Analysis & Rock-Typing Certification

5 days **RCM/ROCKTYPE**

Overview

LEVEL

Expert

PURPOSE

This course develops an integrated approach to rock-type determination combining raw logs, interpreted logs from petrophysical evaluation, core description, and laboratory petrophysical data (routine core analysis and special core analysis). It details the quality control and processing which are necessary before the integration of such data. Interpretation techniques allowing a consistent integration of these different sources of data are developed based on probabilistic classification schemes. Various means to ensure the consistency between lithofacies and petrophysical rock-types incorporating SCAL data are discussed. Alternative approaches for rock-type determination based on specific porosity/permeability models are also presented. Eventually it is shown how the full rock-typing scheme is validated through the modeling of initial water saturation.

LEARNING OBJECTIVES

Upon completion of the course, participants will be able to:

understand the meaning of rock-types and their contribution to reservoir modeling,

recognize log signatures (electrofacies) and tie them to core facies,

learn various porosity-permeability models and their use in rock-typing,

define rock-types with petrophysical data (logs and laboratory data),

perform initial water saturation modeling as a QC of rock-types.

WAYS AND MEANS

The course content will be developed on real case studies.

Hands-on activities are planned on all major topics.

LEARNING ASSESSMENT

Knowledge assessment with multiple choice questions and open explanatory questions.

PREREQUISITES

A basic geological knowledge makes this course more enjoyable.

WHY AN IFP TRAINING CERTIFICATION?

- An international recognition of your competencies.
- A Advanced Certificate delivered.
- An expertise confirmed in Advanced Facies Analysis & Rock-Typing Certification.
- Ready-to-use skills.

Agenda

GENERAL WORKFLOW FOR ROCK-TYPING — 0.5 d

The contribution of rock-types to reservoir modeling.
Electrofacies analysis with supervised and non-supervised approaches.

Preliminary quality control of logs with hands-on.
Integration of core description.
From electrofacies to rock-types.

ELECTROFACIES ANALYSIS

1.5 d

Probabilistic and neural network approaches.
Hands-on supervised analysis with probabilistic approach.
Key points and pitfalls in supervised analysis.
Hands-on non-supervised electrofacies analysis.
Key points in non-supervised analysis.
Workflows for electrofacies analysis.

POROSITY-PERMEABILITY MODELING

1 d

Porosity and permeability modeling in connection with electrofacies.
Permeability models (Carman Kozeny, Lucia, etc.) and their use in rock-typing.

SCAL DATA INTEGRATION

1 d

Introduction to SCAL data.
Capillary pressure curves transformation and integration in rock-typing.
Automatic processing of capillary pressure curves (with hands on).

WATER SATURATION MODELING

1 d

Water saturation modeling based on rock-types with hands-on.