

## From Prospect to Development: an Integrated Approach

**10 days**  
**Overview**

**EVAL/PROSPECT**

### LEVEL

Skilled

### PURPOSE

This course provides the knowledge and skills required to assess and move forward with field studies, from discovery through appraisal, and on to development, always looking for the best scenario.

### LEARNING OBJECTIVES

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

acquire state-of-the-art exploration methodology and workflow for prospect definition and evaluate related probability of success,

identify the link between exploration workflow (leading to the discovery well) and field development stages, while evaluating field potential (at each step of the process),

acquire practical knowledge of both appraisal and development workflows using a real case study.

### WAYS AND MEANS

Exercises and case studies on real examples.

Group workshop on development case histories.

### LEARNING ASSESSMENT

Knowledge assessment with multiple choice questions and open explanatory questions.

### PREREQUISITES

No prerequisites for this course.

## Agenda

### WEEK 1: BASIN ANALYSIS & PROSPECT GENERATION - FROM PLAY TO LEAD (5 days)

The participants carry out a mini-project on a real case study:

Short basin analysis using a seismic line and well-log data.

Potential "play" identification in the basin.

Prospect analysis and ranking.

### INTRODUCTION TO PETROLEUM SYSTEM & BASIN ANALYSIS

Basin potential assessment.

Regional context. Petroleum trilogy.

Play definition.

### RISK ANALYSIS

Geological risk (reservoir, trap, HC conservation), fluid content risk (source rock, maturation, migration, timings).

Probability of success. Consequences for economics.

## **BASIN ASSESSMENT & PROSPECT DEFINITION**

Basin potential assessment:

The petroleum trilogy.

Traps.

Migration versus entrapment timing:

Seismic interpretation.

Well data interpretation.

Cross correlation & integration with seismic data.

Prospect definition:

OHIP calculation.

Uncertainties.

## **WEEK 2: OIL FIELD DEVELOPMENT - FROM DISCOVERY TO PRODUCTION START (5 days)**

### **INTRODUCTION TO E&P WORKFLOW**

General presentation of the different steps of an oil field development project.

Reminder of concepts, tools, methods, necessary data to work with and how to reduce inherent subsurface uncertainties.

Illustration through a case history (onshore field, light oil).

### **DISCOVERY**

Geological and tectonic context of the field.

Seismic interpretation issues.

Evaluation of a discovery well. Related uncertainties.

Proposals for location and program of the first appraisal well.

### **APPRAISAL PHASE**

Evolution of subsurface uncertainties (structural maps, OHIP estimations, etc.) with new data from appraisal wells.

Updating of the issues after each appraisal well.

Definition of data acquisition programs for each well.

Data synthesis at the end of the appraisal phase and OHIP estimations.

### **ENGINEERING STUDIES**

Estimations of reserves, production profiles through simplified methods and a full field simulation.

Estimations of CAPEX, OPEX, technical costs of different development scenarios.

Comparison of production forecasts with actual field production history.