

▲ Who should attend the course?

Exploration-Production staff with little or no previous geophysical experience, who wish to gain theoretical and practical knowledge of basic petroleum geophysics.

▲ Duration

5 days

▲ Dates & Location

September 15 to 19, 2008
Rueil-Malmaison (Paris)

▲ Tuition Fees

€ 1,840

▲ Course Coordinator

Eric FAGOT

Ref. **GEP / GPHYSICS**

PETROLEUM GEOPHYSICS

COURSE OBJECTIVES

To present the fundamentals of petroleum geophysics, including acoustic wave propagation, seismic reflection acquisition, processing and interpretation, well seismic and reservoir geophysics features.

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

- explain theoretical principles of petroleum geophysics
- list and understand the methodology steps of seismic reflection

COURSE CONTENT

WAVES PROPAGATION AND SIGNAL PROCESSING

0.5 day

Seismic Waves, Rock Velocities and Densities, Snell-Descartes Law

Reflection Coefficient, Acoustic Impedance, Hodochrons

Seismic Signal vs Seismic Noise, Time Domain vs Frequency Domain, Spatial and Time Sampling

SEISMIC REFLECTION:

PRINCIPLES, ACQUISITION, PROCESSING

1.5 days

2D and 3D Seismics, Land and Marine Seismics, Seismic Shots and Gathers

Seismic Sources (explosive, vibroseis, airguns, ...), Seismic Receivers (Geophons, Hydrophons, ...)

Streamer, Multiple Coverage, Noise Shot

Seismic Processing Steps, Static Corrections, NMO-DMO Corrections, Velocity Analysis, Stack, Migration, ...

3D Seismic 5 (Principles and Advantages, Design, Acquisition) - Movies

SEISMIC INTERPRETATION : THEORY AND PRACTICE

1.0 day

Principles and Methodology, Major Tectonic Styles Interpretation

Seismic Interpretation Pitfalls

2D Interpretation Practice (on paper)

3D Interpretation Demonstration (on Interactive Workstation)

BOREHOLE SEISMIC

0.5 day

Theory and Principles, Synthetic Seismogram and Well Tie, Vertical Seismic Profile (VSP)

Offset Seismic Profile (OSP), Walkaway, Seismic While Drilling (SWD)

Examples and Applications

RESERVOIR GEOPHYSICS

1.0 day

Seismic Amplitudes, Attributes and Facies, Direct Hydrocarbon Indicators (DHI), Multi-Component Seismic

P Waves - S Waves, Q-Marine, 4 Dimension Seismic (4D), Seismic Inversion, AVO-AVA, Immersive Centers, ...

GRAVIMETRY AND MAGNETISM

0.5 day

Gravimetry Theory and Principles, Acquisition, Processing, Interpretation, Exercises, Examples and Applications

Magnetism Theory and Principles, Acquisition, Processing, Interpretation, Exercises, Examples and Applications