Best Technology Solutions **BTS**

Advanced Seismic Interpretation Training Program

Introduction:

This five day Advanced Seismic Interpretation Course is designed for E&P professionals and aims to provide essential knowledge on visualization, integration, and interpretation techniques that have been recently developed for seismic data. This course assumes an advanced knowledge of seismic interpretation and concentrates on the role of the seismic interpreter in the search for oil and gas.

The course uses learning objectives that are aimed at knowledge and application levels, enabling participants to gain a solid understanding of the applications and role of the seismic interpreter in studies that involve post-stack seismic attributes, AVO, seismic sequence stratigraphy, seismic geomorphology, 4D time-lapse seismic and multidisciplinary integration.

Using recent and relevant case histories, data examples, and exercises, conducted both on paper and with the PETRELÔ software, the course guides participants through an understanding of the integration of all available data into the seismic model that adds value in the needed coherent and successful seismic predictions that result from an interpretation.

Who Should Attend?

Exploration and Production Managers, Geoscientists, Geologists, and Reservoir Engineers Professionals involved in seismic interpretation or dealing with results of the interpretation of seismic data

Course Objectives:

By the end of this course delegates will learn about:

- To acquire skills in interpretation of 3-D seismic data
- To enhance theoretical knowledge of seismic structural interpretation, stratigraphic interpretation, reservoir identification and evaluation, and horizon and formation attributes
- Be familiar with PETRELÔ software

Course Outline:

- Introduction and general overview
- Visual perception, understanding and impact on interpretation
- Fundamental of signal theory, wavelet, resolution and scaling
- Geological concepts, sedimentary models and structural styles
- Central frequency, wedge modeling and tuning analysis exercises
- Mapping exercise
- Introduction to the PETREL software - seismic interpretation module
- Interpretation overall procedure, 2D and 3D techniques
- Sequence stratigraphy and seismic facies analysis
- Seismic geomorphology, stratal slicing and volume flattening
- Seismic geomorphology exercise
- Case history on automated fault interpretation
- Sequence stratigraphy exercise
- Structural validation exercise
- Automated fault mapping exercise
- Post stack attributes, reflective attributes and transmissive attributes
- Geometrical attributes, trace similarity and stratigraphic volume attributes, texture, curvature etc.

- Multi-attributes analysis, calibration, applications, pitfalls and limitations
- Attributes classification, FA, PCA, statistical, neural networks, unsupervised, and supervised classification
- Attributes analysis on carbonate reservoir case history
- Unsupervised classification exercise
- Reservoir Thickness analysis from seismic attributes exercise
- Spectral decomposition
- Basics of rock physics and seismic inversion
- AVO theory and pre-stack attributes
- Overview of depth conversion methods and uncertainty
- Multi-attribute reservoir characterization exercise
- Depth conversion exercise
- AVO gradient-intercept exercise
- Multicomponent seismic interpretation
- 4D time lapse seismic and reservoir monitoring
- Gas hydrates interpretation
- Overview on naturally fractured reservoir characterization from seismic
- 4D interpretation exercise
- Fractured reservoir characterization with attributes exercise