

# 5 DAYS ONLINE TRAINING ON ADVANCED SEISMIC INTERPRETATION



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## COURSE DESCRIPTION

The objective of this course is to provide E&P professionals with knowledge of the latest in Seismic Interpretation techniques.

The course will start with a summary of the basic knowledge required to understand the geophysics behind seismic interpretation and then move on to cover various topics in seismic interpretation including post-stack seismic attributes, AVO, seismic sequence stratigraphy, seismic geomorphology, 4D time-lapse seismic, and multidisciplinary integration.

The latest advances in inversion and application of artificial intelligence to seismic interpretation will be included in the course.



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# AGENDA - DAY 1

## INTRODUCTION

- Polarity, phase, resolution
- True amplitude seismic
- PSTM vs PSDM data
- 2D data and mis-ties

## SEISMIC INTERPRETATION

- 2D and 3D auto-tracking
- Fault interpretation
- Using ghosts (phantoms)
- Horizon slices and flattening
- Making surfaces from interpretation

## WELL TO SEISMIC CORRELATION

- Polarity, phase, resolution
- True amplitude seismic
- PSTM vs PSDM data
- 2D data and mis-ties



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# AGENDA - DAY 2

## MULTI-Z INTERPRETATION (FAULT INTERPRETATION AND FRACTURES)

- Fault auto-tracking
- Chaos, variance and edge enhancements
- Automatic fault extraction
- Fracture identification

## SEISMIC RECONSTRUCTION (DEPTH CONVERSION)

- Introduction to depth conversion and velocities
- Direct conversion
- Velocity models
- Uncertainty in Depth conversion



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## AGENDA - DAY 3

### POST-STACK ATTRIBUTES

- Volume attributes
- Surface attributes
- Geometric attributes
- Volume and horizon probes

### ADVANCED SEISMIC INTERPRETATION

- Seismic Facies analysis
- Multi-attributes
- Supervised and unsupervised classification and artificial intelligence applications
- Spectral decomposition, thin layers and tuning

## AGENDA - DAY 4

### ADVANCED SEISMIC INTERPRETATION

- Wedge modelling
- Blending
- Thickness calculations
- Direct Hydrocarbon Indicators
- Rock physics and fluid substitution
- Amplitude Variation with Offset (AVO)
- Pre-stack attributes
- AVO Modelling



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## AGENDA - DAY 5

### QUANTITATIVE INTERPRETATION

- Deterministic and stochastic inversion
- 4D and 3C
- Lithology determination
- Rock Physics inversion

### **BENEFITS OF JOINING:**

Participants will learn about modern seismic interpretation and learn about some of the latest terminology and techniques in the field. They will receive an overview of and some technical background in the latest advances in seismic interpretation including attributes, AVO, inversion and applications of artificial intelligence and machine learning in seismic interpretation.

### **PERSONAL BENEFITS:**

Updating personal knowledge of seismic interpretation and introduction to latest industry techniques.



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## ORGANIZATIONAL BENEFITS:

Introduction to latest techniques in seismic interpretation which can be applied to active projects.



## WHO SHOULD ATTEND?

E&P Professionals interested in the latest advances in seismic interpretation techniques.



## PREREQUISITE:

Understanding of basic geological and geophysical principles and terminology and some experience with basic seismic interpretation.



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