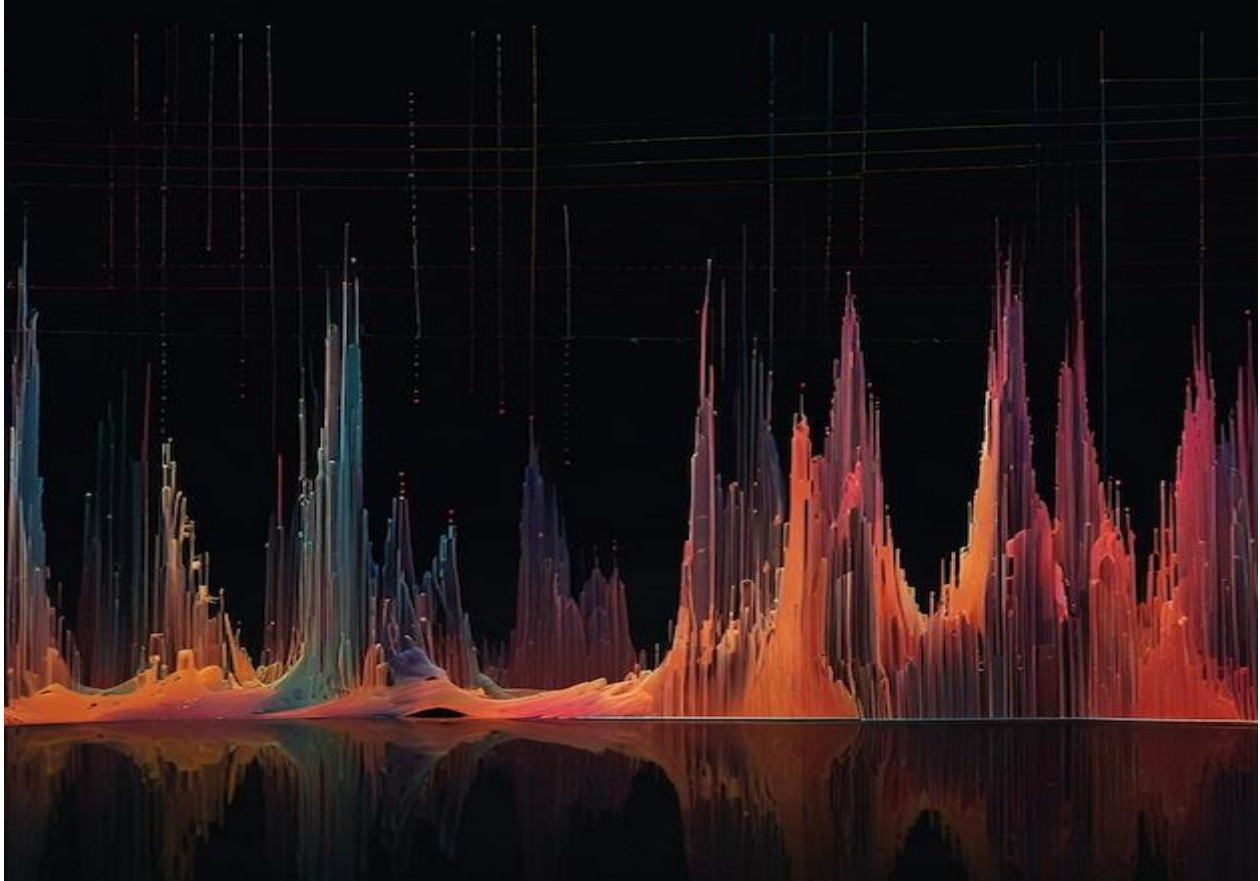




2D and 3D Seismic Interpretation

Course Introduction:

Seismic interpretation is a crucial aspect of subsurface exploration, enabling geoscientists to analyze seismic data for identifying hydrocarbon reservoirs, geological structures, and stratigraphic features. This 5-day training course provides a comprehensive understanding of both 2D and 3D seismic interpretation techniques, equipping participants with the knowledge required to effectively analyze seismic sections, identify geological features, and make informed exploration decisions. The course emphasizes the theoretical aspects of seismic interpretation, ensuring participants gain a strong foundational understanding of seismic data processing, mapping techniques, and geological modeling.

Through structured lectures and case study discussions, attendees will learn the principles of seismic reflection, the significance of structural and stratigraphic interpretation, and how to integrate seismic data with other geoscience disciplines. By the end of the training, participants will be able to critically evaluate seismic data, recognize key geological indicators, and apply interpretation techniques to exploration and development projects.

Course Objectives:

Upon completion of this course, participants will:

- Understand the principles of 2D and 3D seismic data acquisition and processing.
- Recognize key seismic reflection characteristics and their geological significance.
- Differentiate between structural and stratigraphic interpretation techniques.
- Identify faults, folds, and other structural features in seismic sections.
- Correlate seismic data with well logs and geological models.
- Apply seismic attributes in interpretation to enhance subsurface analysis.
- Assess seismic data quality and recognize potential pitfalls in interpretation.

Who Should Attend?

This training program is designed for geoscientists, geophysicists, and petroleum engineers involved in seismic interpretation, as well as professionals from exploration and production teams who wish to enhance their understanding of seismic data analysis. It is also suitable for early-career geoscience professionals, researchers, and academics looking to build a strong theoretical foundation in seismic interpretation techniques.

Course Outline:

Day 1: Fundamentals of Seismic Interpretation

- Introduction to seismic interpretation and its role in exploration and development
- Overview of seismic wave propagation and reflection principles
- Differences between 2D and 3D seismic data
- Basics of seismic data acquisition and processing
- Common artifacts and pitfalls in seismic data

Day 2: Structural Interpretation in Seismic Data

- Identifying faults, folds, and fractures in seismic sections
- Seismic signatures of different structural features
- Interpretation of fault systems and their impact on hydrocarbon trapping
- Structural mapping techniques in 2D and 3D seismic data
- Case study discussions on structural interpretation

Day 3: Stratigraphic Interpretation and Seismic Facies Analysis

- Principles of stratigraphic interpretation in seismic data
- Reflection terminations and their geological significance
- Seismic facies and depositional environment interpretation
- Sequence stratigraphy and seismic stratigraphic techniques
- Application of seismic attributes in stratigraphic analysis

Day 4: Seismic Attributes and Advanced Interpretation Techniques

- Introduction to seismic attributes and their applications
- Amplitude, phase, and frequency attributes in interpretation
- Direct hydrocarbon indicators (DHIs) and their limitations
- Visualization techniques for enhancing 3D seismic interpretation
- Integration of seismic interpretation with other geoscience data

Day 5: Seismic Interpretation Workflow and Case Studies

- Best practices in seismic interpretation workflow
- Interpretation challenges and quality control measures
- Risk assessment and uncertainty in seismic interpretation
- Case study discussions on exploration and development projects
- Summary and Q&A session

Course Methodology:

A variety of methodologies will be used during the course that including:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Fees:

To be advised as per course location. This rate includes participant's manual, Hand-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session