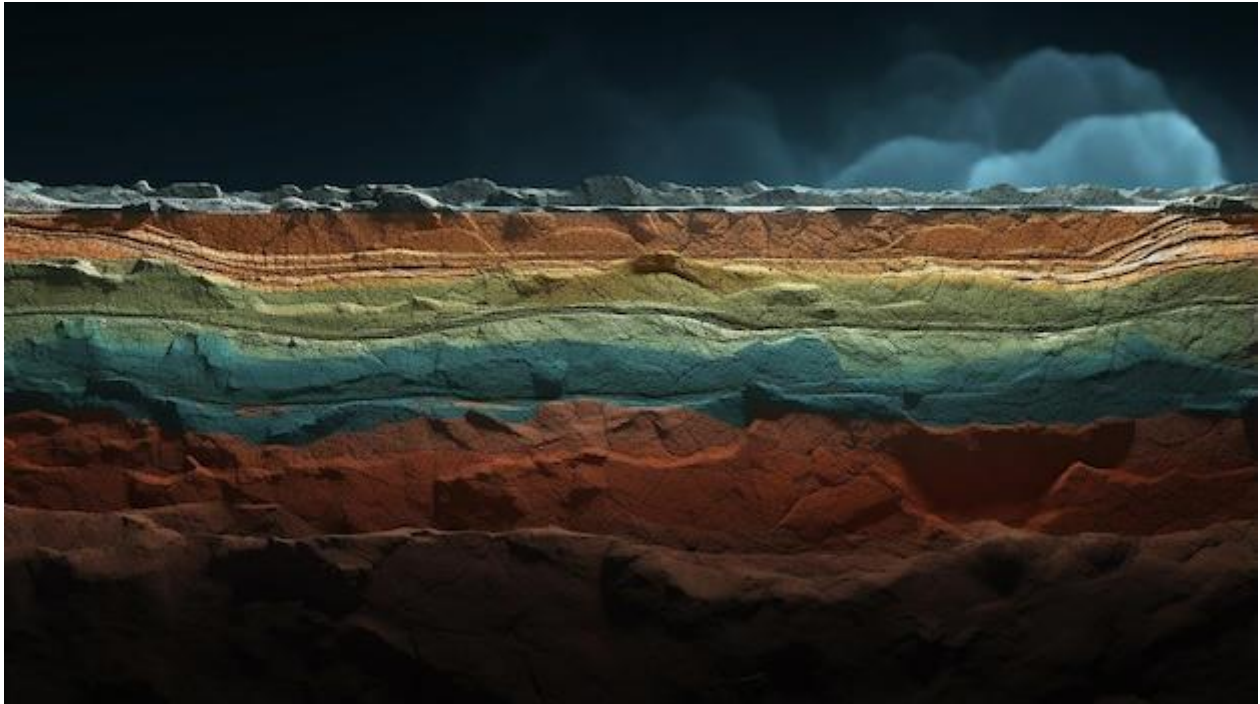




Sequence Stratigraphy: Principles and Applications

Course Introduction:

Sequence stratigraphy is a fundamental discipline in geosciences that provides a framework for understanding sedimentary basin evolution and stratigraphic architecture. This course offers a comprehensive overview of the principles, key concepts, and applications of sequence stratigraphy, emphasizing its role in petroleum exploration, reservoir characterization, and basin analysis. Participants will learn about the fundamental building blocks of sequence stratigraphy, including depositional sequences, systems tracts, sequence boundaries, and relative sea-level changes.

The course is structured over five days, covering essential theoretical aspects. It will begin with foundational concepts and historical development before progressing to sequence stratigraphic models, key surfaces, and depositional systems. Subsequent sessions will focus on sequence stratigraphic interpretations, controls on sequence development, and applications in hydrocarbon exploration and other geological studies. By the end of the course, participants will have a solid theoretical understanding of sequence stratigraphy and its significance in geological interpretations.

Course Objectives:

Upon completion of this course, participants will:

- Understand the fundamental principles and historical development of sequence stratigraphy.
- Identify key sequence stratigraphic surfaces and systems tracts.
- Explain the processes influencing sequence stratigraphic architecture, including eustatic sea-level changes, tectonics, and sediment supply.
- Differentiate between various sequence stratigraphic models and their applications.
- Recognize the significance of sequence stratigraphy in petroleum exploration and reservoir characterization.
- Apply sequence stratigraphic principles to basin analysis and geological interpretations.

Who Should Attend?

This course is designed for geologists, geophysicists, sedimentologists, and petroleum engineers who seek a deeper understanding of sequence stratigraphy and its applications. It is particularly beneficial for professionals in the oil and gas industry, academia, and research institutions who work with stratigraphic data, basin analysis, and reservoir characterization.

Course Outline:

Day 1: Introduction to Sequence Stratigraphy

- Definition and significance of sequence stratigraphy
- Historical development and key contributors
- Comparison with lithostratigraphy and biostratigraphy
- Basic stratigraphic principles relevant to sequence stratigraphy

Day 2: Sequence Stratigraphic Framework and Key Concepts

- Depositional sequences and their hierarchical organization
- Sequence boundaries and unconformities
- Systems tracts: lowstand, transgressive, highstand, and falling stage systems tracts
- Role of accommodation space in sequence stratigraphy

Day 3: Sequence Stratigraphic Models and Key Surfaces

- Genetic vs. depositional sequence models
- Parasequences and stacking patterns
- Maximum flooding surfaces (MFS), transgressive surfaces (TS), and sequence boundaries (SB)
- Walther's Law and its implications in sequence stratigraphy

Day 4: Controls on Sequence Development

- Relative sea-level changes: eustasy vs. tectonics
- Sediment supply and climatic influences
- Subsidence and uplift impacts on sequence stratigraphy
- The role of sequence stratigraphy in basin evolution

Day 5: Applications of Sequence Stratigraphy

- Petroleum system analysis and reservoir characterization
- Sequence stratigraphy in hydrocarbon exploration
- Integration with seismic and well log data
- Advances and future directions in sequence stratigraphy

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