

CLASTIC RESERVOIR CHARACTERIZATION AND SEQUENCE STRATIGRAPHY



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TRAINING CENTER



Introduction

Clastic Reservoir Characterization and Sequence Stratigraphy Training Course examines how clastic depositional systems shape hydrocarbon reservoirs across time and space. Participants explore the principles of sequence stratigraphy, including systems tracts, sequence boundaries, and flooding surfaces, and learn how these concepts guide reservoir prediction. The course links outcrop analogues, core descriptions, and wireline logs to build accurate subsurface models. Through practical exercises, attendees strengthen their ability to correlate stratigraphic units and identify reservoir quality trends. Furthermore, the course highlights integration between geology and engineering workflows, supporting better exploration and development decisions. This Training Course equips geoscientists with practical tools for real subsurface challenges in clastic basins worldwide.

Clastic Reservoir Characterization and Sequence Stratigraphy Course Objectives

- Explain the principles of sequence stratigraphy and depositional systems tracts
- Identify sequence boundaries, maximum flooding surfaces, and transgressive surfaces in well data
- Analyze clastic facies associations using core and outcrop observations
- Correlate stratigraphic surfaces across wells using log-based methods
- Apply Walther's Law to interpret vertical facies successions
- Integrate seismic stratigraphy with well log correlation for reservoir zonation
- Build chronostratigraphic frameworks for exploration and development planning
- Use geostatistical techniques to model reservoir heterogeneity
- Evaluate reservoir connectivity and compartmentalization in clastic systems
- Construct static reservoir models incorporating stratigraphic surfaces



Course Methodology

- Interactive lectures covering core stratigraphic concepts
- Real case studies from clastic basins worldwide
- Hands-on core description and facies logging exercises
- Well log correlation workshops using field examples
- Group discussions on sequence stratigraphic interpretation
- Practical demonstrations of reservoir modeling workflows using Petrel
- Continuous instructor feedback throughout structured exercises

Who Should Take This Course

- Petroleum geologists and geoscientists
- Reservoir engineers and petrophysicists
- Exploration and development teams
- Sedimentologists and stratigraphers
- Subsurface data analysts
- Geoscience students seeking practical exposure
- Technical staff supporting field development planning

Clastic Reservoir Characterization and Sequence Stratigraphy Course Outlines

Day 1: Fundamentals of Clastic Depositional Systems

- Overview of clastic sedimentary environments
- Fluvial, deltaic, and shallow marine systems



- Depositional processes controlling reservoir architecture
- Grain size, sorting, and porosity relationships
- Outcrop analogues for clastic reservoirs
- Introduction to facies classification schemes
- Case study: fluvial-deltaic reservoir example

Day 2: Sequence Stratigraphy Principles and Surfaces

- Sequence stratigraphy concepts and terminology
- Systems tracts: lowstand, transgressive, highstand
- Identifying sequence boundaries and flooding surfaces
- Base-level change and accommodation space
- Parasequences and stacking patterns
- Chronostratigraphic correlation methods
- Workshop: surface picking exercise

Day 3: Facies Analysis and Log-Core Integration

- Core description techniques for clastic rocks
- Facies association and vertical successions
- Walther's Law application in interpretation
- Well log signatures of clastic facies
- Calibrating logs with core data
- Petrophysical evaluation of reservoir quality
- Practical exercise: facies-log correlation

Day 4: Reservoir Zonation and Correlation Techniques

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- Stratigraphic correlation across multiple wells
- Zonation schemes for reservoir management
- Seismic stratigraphy and horizon mapping
- Integrating seismic and well data
- Identifying reservoir compartments and barriers
- Uncertainty in stratigraphic correlation
- Case study: multi-well correlation panel

Day 5: Static Reservoir Modeling and Applications

- Building 3D stratigraphic frameworks
- Geostatistical modeling of reservoir heterogeneity
- Populating models with facies and properties
- Reservoir connectivity assessment
- Application to field development planning
- Best practices for model validation
- Final workshop: integrated reservoir model review

Conclusion

By successfully completing Clastic Reservoir Characterization and Sequence Stratigraphy, participants will have acquired a strong understanding of depositional systems, sequence stratigraphic principles, and integrated correlation techniques. They will gain practical skills in facies analysis, log-core integration, and static reservoir modeling that support reliable subsurface interpretation. As a result, participants will be better prepared to contribute to exploration and development projects in clastic basins. Gentex Training Center delivers this Training Course with a strong focus on applied, real-world reservoir characterization knowledge.





FAQs

Q1 What is the "Clastic Reservoir Characterization and Sequence Stratigraphy" course about?

This course explains how clastic depositional systems and sequence stratigraphic principles help characterize hydrocarbon reservoirs. It covers facies analysis, stratigraphic surfaces, and correlation techniques used to build accurate subsurface models for exploration and development purposes across diverse clastic basin settings.

Q2 What are the key benefits of the "Clastic Reservoir Characterization and Sequence Stratigraphy" course?

Participants gain a structured framework for interpreting clastic reservoirs, improving correlation accuracy and reservoir prediction. As a result, teams can make more informed exploration and development decisions, reduce subsurface uncertainty, and strengthen collaboration between geology and reservoir engineering disciplines.

Q3 What skills will I gain from the "Clastic Reservoir Characterization and Sequence Stratigraphy" course?

Participants develop skills in facies analysis, sequence stratigraphic interpretation, well log correlation, and static reservoir modeling. These skills support accurate reservoir characterization and enable stronger integration of geological and engineering data across subsurface workflows.



Q4 What tools, methods, or standards are covered in the "Clastic Reservoir Characterization and Sequence Stratigraphy" course?

The course covers core description methods, Walther's Law, systems tract analysis, seismic stratigraphy, and geostatistical modeling tools such as Petrel. These methods support reliable correlation, zonation, and construction of static reservoir models.

Q5 How is the "Clastic Reservoir Characterization and Sequence Stratigraphy" course applied in real-world practice?

Concepts learned are applied directly to well correlation panels, reservoir zonation, and static model building. Furthermore, participants use facies and stratigraphic frameworks to support field development planning, well placement, and reservoir management decisions in operating environments