Advanced Clastic Sedimentology and Depositional Systems Training Course

29 March – 2 April 2027
Barcelona

AGILE LEADERS
Training Center

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Ref: 1317_197326 **Date:** 29 March – 2 April 2027 **Location:** Barcelona **Fees:** 6500 Euro

Overview

Advanced Clastic Sedimentology and Depositional Systems Training Course is a one-week course for geologists, sedimentologists, reservoir specialists, and subsurface teams who leave with a Clastic Depositional Interpretation Portfolio. Participants connect clastic sedimentology, grain and texture description, sedimentary structures, lithofacies analysis, depositional environment interpretation, stratigraphic architecture, core-to-log calibration, depositional models, reservoir heterogeneity, and uncertainty. The approach integrates observations across scales into traceable interpretations. Agile Leaders Training Center presents clastic depositional systems as an evidence-led geoscience discipline.

Who Should Attend

- Teams responsible for sedimentological interpretation and depositional modeling
- Functions responsible for core, outcrop, cutting, and image-log description
- Reservoir groups responsible for facies frameworks and heterogeneity assessment
- Subsurface teams responsible for well correlation and stratigraphic architecture
- Geoscience assurance groups responsible for interpretation quality and uncertainty

The course assumes participants already use geological observations, logs, maps, or subsurface data, and it leaves out introductory mineral identification and seismic-processing instruction.

Departments and Industries

The course supports departments and industries that interpret clastic rocks, sedimentary basins, reservoirs, aquifers, and engineering ground conditions.

- Oil, gas, energy, and subsurface resource teams
- Mining, groundwater, carbon storage, and geothermal projects
- Geological surveys, research institutes, and universities
- Reservoir characterization, development geology, and petrophysics
- Geotechnical, environmental, and engineering geology functions

Learning Objectives

By the end of this course, participants will be able to:

- Analyze clastic texture, composition, and sedimentary structures
- Build lithofacies codes and facies-association frameworks
- Use core, outcrop, and log evidence for interpretation
- Compare fluvial, deltaic, coastal, eolian, and deep-water models
- Evaluate stratigraphic architecture and reservoir heterogeneity
- Build integrated interpretations with explicit uncertainty

Course Agenda

Day 1: Clastic Description and Process

- Udden-Wentworth Grain-Size Classification Worksheet
- Texture, Sorting, Roundness, and Fabric Description Guide
- Sedimentary Structure and Bedform Interpretation Matrix
- Paleoflow Indicator and Process-Energy Analysis
- Clastic Observation Quality-Control Checklist

Day 2: Lithofacies and Evidence Integration

- Lithofacies Coding and Description Template
- Facies Association and Process-Response Method
- Core and Outcrop Graphic Log Construction
- Core-to-Wireline Depth-Matching Workflow
- Facies Evidence Confidence and Alternative Register

Day 3: Depositional Environment Models

- Alluvial and Fluvial Architecture Interpretation Model
- Eolian and Lacustrine Depositional Evidence Matrix
- Deltaic Process-Dominance and Facies Model
- Coastal and Shallow-Marine Succession Analysis
- Deep-Water Channel, Lobe, and Fan Interpretation Framework

Day 4: Stratigraphic Architecture and Reservoir Impact

- Vertical Stacking Pattern and Bounding-Surface Hierarchy
- Depositional-Dip and Strike Correlation Method
- Sand-Body Geometry and Connectivity Map
- Facies-Controlled Reservoir Heterogeneity Assessment
- Depositional Model Uncertainty and Scenario Matrix

Day 5: Clastic Interpretation Practice

- Exercise: Grain, Structure, and Process Diagnosis
- Exercise: Lithofacies Association and Environment Interpretation
- Exercise: Core-to-Log Calibration and Correlation
- Exercise: Architecture, Connectivity, and Uncertainty Review
- Capstone Exercise: Clastic Depositional Interpretation Portfolio

Practical Exercises

The course uses suggested activities based on core, outcrop, well-log, aquifer, reservoir, and engineering-geology datasets.

- Suggested activity: describe grain attributes and structures, assign process interpretations, and record evidence quality.
- Suggested activity: group lithofacies into associations and compare plausible fluvial, deltaic, coastal, eolian, or deep-water settings.
- Suggested activity: calibrate graphic core logs to wireline responses and construct a time-aware correlation panel.
- Suggested activity: translate facies architecture into connectivity scenarios, reservoir implications, and uncertainty statements.

FAQs

What is clastic sedimentology and depositional systems interpretation?

Clastic sedimentology and depositional systems interpretation uses texture, structures, facies, geometry, and stratigraphic relationships to infer sediment transport, deposition, environment, and preserved architecture.

How does lithofacies analysis support depositional environment interpretation?

Lithofacies analysis organizes recurring rock attributes into evidence units and associations, allowing interpreters to connect observed textures and structures with depositional processes and settings.

Who suits advanced clastic sedimentology training and what does it assume?

Advanced clastic sedimentology training suits geologists and subsurface professionals who interpret rock, core, outcrop, or logs. It assumes working familiarity with geological descriptions and stratigraphic data.

How does clastic depositional systems training differ from general reservoir modeling?

Clastic depositional systems training focuses on geological evidence, facies, processes, environments, architecture, and interpretation uncertainty. General reservoir modeling focuses more broadly on building and calculating subsurface property models.

How is uncertainty managed in clastic depositional interpretation?

Interpretation uncertainty is managed by separating observations from inference, recording evidence strength, testing alternative environments, checking scale and analog fit, and carrying scenarios into architecture and connectivity decisions.

Conclusion

The course integrates clastic description, process analysis, lithofacies, depositional models, stratigraphic architecture, reservoir implications, and uncertainty. Participants take back a Clastic Depositional Interpretation Portfolio containing logs, matrices, facies frameworks, correlation panels, geometry maps, and scenarios. The portfolio improves traceability, consistency, and communication across geological interpretation and subsurface decisions.