

Unconventional Oil and Gas Resource Evaluation Training Course

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Overview

Unconventional Oil and Gas Resource Evaluation Training Course is a one-week course for geoscientists, engineers, asset teams, and technical decision-makers who leave with an Unconventional Resource Evaluation and Development Decision Pack. Participants integrate tight and shale plays, reservoir characterization, production analysis, uncertainty, economics, and development decisions rather than treating each discipline separately. Agile Leaders Training Center presents this course on unconventional oil and gas resource evaluation.

Who Should Attend

- Functions responsible for unconventional resource geology and play definition
- Teams responsible for petrophysical and geomechanical reservoir characterization
- Personnel responsible for reservoir, production, and well performance evaluation
- Groups responsible for drilling, completion, and stimulation interfaces
- Asset teams responsible for development planning, economics, and technical assurance

The course assumes participants interpret subsurface, well, production, or economic evidence at work; it leaves out software-specific simulation and detailed hydraulic-fracture design.

Departments and Industries

The course supports departments and industries that evaluate, develop, finance, or advise unconventional resources.

- Oil and gas exploration and subsurface functions
- Reservoir, production, drilling, and completion departments
- Integrated asset and field development teams
- Energy investment and technical due-diligence groups
- Engineering consultancies and geoscience service organizations
- Environmental, operational risk, and technical assurance functions

Learning Objectives

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

- Analyze unconventional petroleum systems and play elements
- Integrate core, log, petrophysical, and geomechanical evidence
- Evaluate well placement, completion, and stimulation context
- Diagnose production behavior with transient and decline methods
- Compare development scenarios, economics, and uncertainty
- Build an evidence-based resource development decision pack

Course Agenda

Day 1: Frame Unconventional Resource Systems

- Conventional and Unconventional Resource Comparison Matrix
- Tight and Shale Play Elements Map
- Source-Rock Maturity and Fluid Window Chart
- Pore-System and Storage Mechanism Diagram
- Resource Evaluation Data Inventory

Day 2: Characterize Rock and Reservoir Quality

- Core and Log Integration Workflow
- Total Organic Carbon and Maturity Profile
- Petrophysical Cutoff and Saturation Matrix
- Geomechanical Brittleness and Stress Map
- Reservoir Quality Sweet-Spot Ranking

Day 3: Connect Wells, Stimulation, and Flow

- Horizontal Well Placement Decision Sheet
- Completion and Stage Architecture Map
- Hydraulic-Fracture Context and Containment Diagram
- Fracture-Network and Matrix Flow Model
- Operational and Environmental Interface Register

Day 4: Evaluate Production and Development

- Rate-Transient Analysis Diagnostic Plot
- Decline-Curve and Recovery Forecast Set
- Well Spacing and Interference Assessment
- Development Scenario Economics Model
- Resource Uncertainty and Decision Matrix

Day 5: Practice Unconventional Development Decisions

- Suggested Exercise: Classify a Tight and Shale Play
- Suggested Exercise: Rank Reservoir Sweet Spots
- Suggested Exercise: Interpret Production Decline
- Suggested Exercise: Compare Development Scenarios
- Capstone Exercise: Present an Unconventional Resource Evaluation and Development Decision Pack

Practical Exercises

The course uses suggested activities to convert geological, petrophysical, well, production, and economic evidence into development choices.

- Suggested activity: classify a play using source, reservoir, maturity, storage, and flow evidence.
- Suggested activity: integrate core, log, petrophysical, and stress indicators to rank sweet spots.
- Suggested activity: interpret transient and decline evidence while documenting forecast uncertainty.
- Suggested activity: compare spacing, completion, recovery, cost, environmental, and operational assumptions across development scenarios.

FAQs

Who suits unconventional oil and gas resource evaluation training, and what does it assume?

Geoscience, reservoir, production, well, asset, and technical decision functions suit the training. It assumes experience interpreting subsurface, well, production, or economic evidence.

How does unconventional oil and gas resource evaluation differ from hydraulic-fracturing design training?

Unconventional resource evaluation integrates geology, petrophysics, geomechanics, wells, production, uncertainty, and economics. Hydraulic-fracturing design training concentrates on stimulation engineering, treatment design, execution, and diagnostics.

How are sweet spots identified in tight and shale plays?

Sweet spots are identified by combining petroleum-system evidence, reservoir quality, organic richness and maturity, saturation, pore structure, geomechanical properties, stress, completion access, and expected flow behavior.

How is production evaluated in unconventional oil and gas reservoirs?

Production is evaluated by checking data quality, recognizing flow regimes, applying rate-transient and decline methods, testing interference, forecasting recovery, and recording the assumptions and uncertainty behind each estimate.

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How should unconventional development scenarios be compared?

Development scenarios should be compared through consistent assumptions for well placement, spacing, completion approach, production profile, recovery, cost, schedule, operational constraints, environmental interfaces, uncertainty, and decision criteria.

Conclusion

Participants take an Unconventional Resource Evaluation and Development Decision Pack back to their organization. It connects play definition, reservoir quality, well context, production behavior, economics, and uncertainty. Teams can use the pack to rank evidence, compare development scenarios, document assumptions, and explain technical recommendations.

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