

Well Completion Design and Equipment Selection Training Course

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Overview

Well Completion Design and Equipment Selection Training Course is a one-week intermediate course for completion, production, drilling, reservoir, petroleum, well integrity, and operations functions who leave with a Well Completion Design File. Participants connect well completion design, completion architecture, production tubing, packer selection, flow control, sand control, installation, surveillance, and well integrity. The course turns reservoir and well objectives into traceable equipment and life-cycle decisions. Agile Leaders Training Center presents well completion design and equipment selection.

Who Should Attend

- Functions responsible for completion design bases and architecture selection
- Teams responsible for production tubing, packers, and downhole equipment
- Functions responsible for reservoir access, inflow, and flow-control decisions
- Groups responsible for well integrity, barriers, and operating envelopes
- Teams responsible for installation, commissioning, and completion readiness
- Operations functions responsible for surveillance and life-cycle performance

The course assumes participants interpret basic well, reservoir, pressure, temperature, and production data; it leaves out drilling-program design, detailed casing calculations, stimulation execution, and lift-system optimization.

Departments and Industries

The course supports departments and industries that design, install, operate, or assure production-well completions.

- Onshore and offshore oil and gas production
- Completion and petroleum engineering departments
- Reservoir and production technology functions
- Well integrity and technical assurance teams
- Drilling, workover, and intervention organizations
- Geothermal and subsurface production projects

Learning Objectives

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

- Analyze reservoir, well, and production design inputs
- Compare openhole, cased-hole, single-zone, and multizone architectures
- Build tubing, packer, valve, and accessory specifications
- Evaluate sand-control, flow-control, and lift-readiness interfaces
- Diagnose pressure, temperature, material, and integrity constraints
- Prioritize installation, commissioning, surveillance, and life-cycle actions

Course Agenda

Day 1: Establish the Completion Design Basis

- Reservoir, Well, and Production Objective Matrix
- Pressure, Temperature, Rate, and Fluid Design Envelope
- Well Geometry, Restriction, and Access Register
- Completion Functional Requirements Document
- Completion Design Risk and Assumption Log

Day 2: Select the Completion Architecture

- Openhole and Cased-Hole Architecture Decision Tree
- Single-Zone and Multizone Completion Schematic
- Perforation, Inflow, and Flow-Control Interface Map
- Sand-Control Screen and Gravel-Pack Selection Matrix
- Stimulation and Artificial-Lift Readiness Checklist

Day 3: Specify Tubing and Downhole Equipment

- Production-Tubing Size and Flow-Capacity Worksheet
- Tubing Load, Movement, and Stress Case Register
- API 11D1 Packer Functional Specification Sheet
- Subsurface Safety Valve and Barrier Selection Matrix
- Landing Nipple, Sliding Sleeve, and Accessory Schedule

Day 4: Assure Installation and Life-Cycle Integrity

- Materials, Corrosion, Erosion, and Compatibility Register
- Completion Barrier and Pressure-Test Verification Plan
- Running Sequence and Installation Contingency Program
- Commissioning and Production Handover Checklist
- Completion Surveillance and Failure-Diagnostic Dashboard

Day 5: Practice Completion Decisions

- Suggested Exercise: Reconcile a Completion Design Basis
- Suggested Exercise: Select a Completion Architecture
- Suggested Exercise: Specify Tubing, Packer, and Safety Equipment
- Suggested Exercise: Resolve an Installation and Integrity Constraint
- Capstone Exercise: Present a Well Completion Design File

Practical Exercises

The course uses suggested activities to convert reservoir, well, equipment, and operating evidence into coordinated completion decisions.

- Suggested activity: define design limits from pressure, temperature, fluids, geometry, rate, access, and intervention evidence.
- Suggested activity: compare openhole, cased-hole, single-zone, and multizone arrangements with sand- and flow-control interfaces.
- Suggested activity: assemble tubing, packer, safety-valve, accessory, material, and pressure-test requirements.
- Suggested activity: diagnose installation, barrier, surveillance, and life-cycle constraints and record response actions.

FAQs

Who suits well completion design training, and what does it assume?

Well completion design training suits completion, production, drilling, reservoir, petroleum, integrity, and operations functions. It assumes participants can interpret basic well, reservoir, pressure, temperature, and production data.

How does well completion design differ from advanced casing design?

Well completion design concentrates on reservoir access, production tubing, packers, safety equipment, flow control, sand control, installation, and life-cycle operation. Casing design concentrates on well-construction tubular loads, strength, setting depths, and casing integrity.

How is a well completion architecture selected?

A well completion architecture is selected by comparing reservoir access, zonal isolation, inflow control, sand risk, intervention needs, pressure and temperature, artificial-lift readiness, installation complexity, and life-cycle operating objectives.

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What governs production tubing and packer selection?

Production tubing and packer selection is governed by flow capacity, well geometry, pressure differential, temperature, fluids, materials, loads, movement, connections, barriers, control lines, retrieval strategy, and the planned installation sequence.

What evidence supports well completion integrity decisions?

Well completion integrity decisions use equipment specifications, load cases, material limits, barrier schematics, pressure tests, running records, commissioning results, annulus trends, production response, surveillance data, and intervention history.

Conclusion

Participants take a Well Completion Design File back to their organization. It links design inputs, architecture, tubing, packers, safety equipment, flow and sand control, materials, installation, testing, commissioning, and surveillance. The file changes separate subsurface, equipment, and operations records into a traceable basis for completion selection, readiness reviews, handover, integrity monitoring, and life-cycle decisions.

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