Cost Estimating & Value Engineering for Oil and Gas Projects Training Course

7 – 11 March 2027
Dubai (UAE)

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Cost estimating and value engineering for oil and gas projects is the practice of forecasting what a facility will cost at each stage of its development and then testing its design for cheaper ways to deliver the same function. This 1-week course is for engineers and cost staff on upstream, midstream and downstream facility projects, and its final deliverable is a staged estimate and value review for a sample facility.

Introduction

The course rests on three ideas. AACE estimate classes grade an estimate by how much of the project is defined, from early screening to near-complete design. The stage-gate cycle of a facility project, from screening through select to front-end engineering design FEED, sets when each class is expected. Value engineering is a structured review of what each part of a design must do and what that function costs. The level is intermediate: delegates already read drawings and cost data. Teaching runs on a case study of one facility followed through every stage.

Course Objectives

- Define the AACE estimate classes and the project definition each one requires.
- Distinguish capacity-factored estimates from semi-detailed unit-cost estimates and select the right one for a stage gate.
- Interpret the direct and indirect cost components of an EPC facility estimate.
- Compare allowance, contingency and escalation and justify each amount in a basis of estimate.
- Apply function analysis in a value engineering review held at FEED.
- Select cost control measures that link the sanctioned budget to execution reporting.

Target Audience

- Project engineers on facility projects who decide which estimating method suits the current stage gate.
- Cost and estimating engineers who must defend the class and accuracy of an estimate.
- Process, mechanical and piping leads who judge which design options to put forward for value review.
- Planning and cost control staff who decide how a sanctioned budget is broken down and tracked.
- Contract and procurement engineers who weigh how contract strategy changes the cost estimate.

Course Outline

Day 1: Estimate Classes Across the Facility Life Cycle

- Stage-Gate Cycle: Screening, Select and FEED Phases of a Facility Project
- AACE Estimate Classes: Grading an Estimate by Level of Project Definition
- Class 4 vs Class 3: Study-Stage Figure Against Budget Authorisation Estimate
- Accuracy Ranges: Reading Expected Spread rather than Quoting a Fixed Figure
- Final Investment Decision: How the Estimate Supports Project Sanction

Day 2: Building the Estimate for Oil and Gas Facilities

- Capacity Factoring vs Unit-Cost Estimating: Two Ways to Price a Plant
- Equipment Factored Estimates: Scaling Bulk Materials from Major Equipment Cost
- Direct Costs: Equipment, Bulk Materials and Construction Labour on Site
- Indirect Costs: Engineering, Construction Management, Temporary Facilities and Owner Costs
- Cost References and Historical Data: Normalising Past Projects for Reuse

Day 3: Risk, Contingency and Contract Strategy

- Allowance vs Contingency: Known Unknowns Against Unquantified Project Risk
- Range Estimating: Setting Low, Likely and High Values for Key Items
- Escalation and Currency Exposure: Adjusting Prices over a Long Schedule
- Lump-Sum vs Reimbursable EPC Contracts: Where Cost Risk Sits
- Basis of Estimate Document: Recording Scope, Assumptions and Exclusions

Day 4: Value Engineering at FEED

- Value Engineering vs Cost Cutting: Function Retained Against Scope Removed
- Function Analysis: Naming What Each System or Component Must Do
- Life-Cycle Cost: Comparing Capital Spend with Operating and Maintenance Cost
- Idea Generation and Evaluation: Scoring Design Alternatives Against Weighted Criteria
- Value Review Timing: Why FEED Offers the Widest Room for Change

Day 5: Applying the Estimate and Value Review to a Facility

- Case Facility Scope: Applying Class Selection to a Gas Processing Unit
- Estimate Build-Up: Combining Direct, Indirect and Contingency for the Case
- Cost Breakdown Structure vs Work Breakdown Structure: Mapping Budget to Control
- Commitment and Forecast Reporting: Tracking Spend Against the Sanctioned Budget
- Final Deliverable: Staged Estimate and Value Review Presented for Sanction

Skills You Will Gain

- Estimate classification
- Equipment factored estimating
- Direct and indirect cost build-up
- Contingency and escalation setting
- Basis of estimate writing
- Function analysis
- Life-cycle cost comparison
- Budget-to-control mapping

Why Attend This Course

- From quoting a single cost figure to stating the estimate class and the spread around it.
- From adding a flat percentage for risk to setting contingency from ranged key items.
- From trimming scope late in design to holding a value review at FEED when change is cheapest.
- From scattered cost notes to a staged estimate and value review for a sample facility, ready for a sanction decision.

Conclusion

Pricing an oil and gas facility is a sequence of estimates that grow more detailed as engineering matures, each one judged by its class rather than by a single number. The course makes three distinctions clear: factored against unit-cost estimating, allowance against contingency, and value engineering against cost cutting. It suits engineers and cost staff with working experience on processing plants, pipelines, terminals or petrochemical units who now need to prepare or challenge estimates at stage gates.

Course FAQs

What is cost estimating and value engineering for oil and gas projects?

It is the forecasting of facility cost at each development stage, paired with a structured review that looks for lower-cost ways to deliver each required function. Estimates grow in detail from screening to FEED, and value review is placed where design change is still affordable.

What is the difference between allowance and contingency in an oil and gas cost estimate?

An allowance covers items known to be needed but not yet quantified, such as extra piping fittings. Contingency covers project risks that cannot be listed item by item, and is set from ranged values rather than a flat percentage.

Which estimate classification does oil and gas cost estimating training follow?

It follows the AACE estimate classes, which grade an estimate by how much of the project is defined. A FEED estimate is typically treated as Class 3, a semi-detailed unit-cost estimate used to support budget authorisation.

Is cost estimating and value engineering for oil and gas projects suitable for a process engineer?

Yes, for process engineers who select equipment and design options. The value review sessions depend on their judgement of function, and the estimating sessions show how their design choices drive installed cost.

What does a delegate produce in oil and gas cost estimating and value engineering training?

Each delegate builds a staged estimate for a sample gas processing unit, with a basis of estimate, a contingency figure and a value review of selected design options, then presents it as a sanction package.