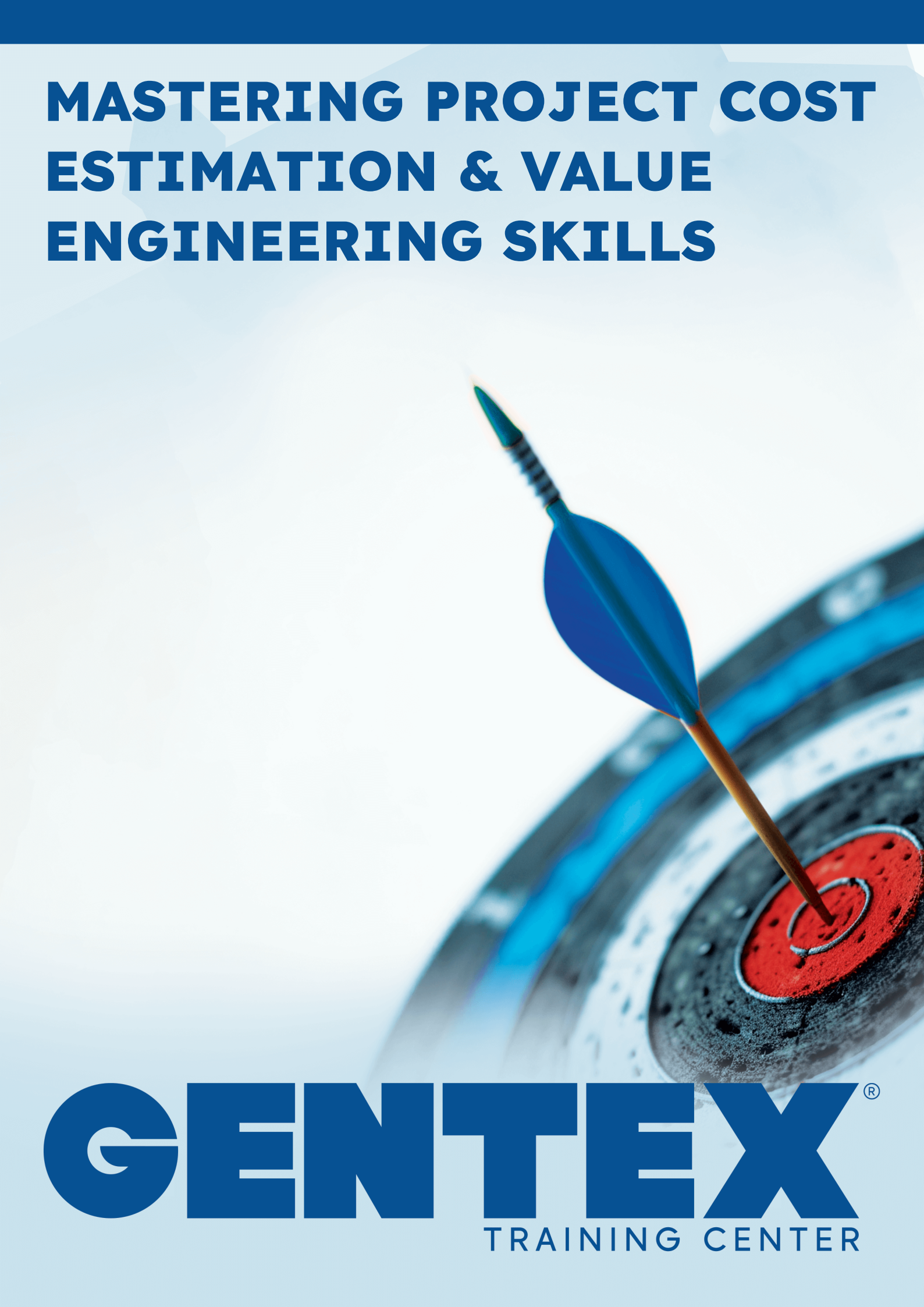
MASTERING PROJECT COST ESTIMATION & VALUE ENGINEERING SKILLS



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GENTEX Training Center LLC | Orlando - FL, USA
Info@gentextraining.com

Introduction

Mastering Project Cost Estimation & Value Engineering Skills is a practical Training Course that teaches professionals how to price work accurately and then reduce cost without losing performance. Participants learn to prepare reliable estimates, build cost models, and test designs against function and value rather than habit. The course pairs estimating discipline with value engineering method, so learners question every cost item and justify every choice. Furthermore, it covers risk allowances, lifecycle costing, and tender pricing in one connected workflow. As a result, participants leave able to protect budgets and improve project value from the earliest design stage.

Mastering Project Cost Estimation & Value Engineering Skills Course Objectives

- Prepare accurate estimates using parametric, analogous, and bottom-up methods.
- Build work breakdown structures aligned with the cost breakdown structure.
- Perform quantity take-off and rate build-up with confidence.
- Apply the AACE International estimate classes and accuracy ranges.
- Run value engineering studies using the job plan and function analysis.
- Apply the value methodology standard to test cost against function.
- Conduct lifecycle costing and whole-life cost comparisons.
- Quantify risk and uncertainty with contingency and Monte Carlo analysis.
- Evaluate alternatives using weighted scoring and cost-benefit analysis.
- Present tender pricing and cost reports that support approval decisions.

Course Methodology

- Workshop sessions built on real estimating and design data.

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- Guided practice with take-off, rate build-up, and cost modelling.
- Value engineering workshops using function analysis and creativity phases.
- Simulation exercises on risk allowance and contingency setting.
- Group review of participant estimates and VE proposals.
- Case studies from construction, manufacturing, and infrastructure.

Who Should Take This Course

- Cost estimators and quantity surveyors.
- Project and design engineers.
- Contracts and tender pricing officers.
- Value engineering and cost engineering specialists.
- Procurement and commercial managers.
- Consultants and client cost control teams.

Mastering Project Cost Estimation & Value Engineering Skills Course Outlines

Day 1: Estimating Foundations and Cost Structures

- Cost estimating versus budgeting, pricing, and forecasting.
- Estimate classes and accuracy ranges per AACE International.
- Work breakdown structure and cost breakdown structure alignment.
- Cost elements: labour, material, equipment, and overheads.
- Direct and indirect cost classification.
- Estimate documentation and basis of estimate.
- Common estimating errors and bias traps.

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Day 2: Estimating Methods and Quantity Take-Off

- Parametric estimating and cost capacity factors.
- Analogous estimating from historical project data.
- Bottom-up estimating from detailed take-off.
- Quantity take-off from drawings and specifications.
- Rate build-up: labour constants, productivity, and wastage.
- Unit rate libraries and cost databases.
- Escalation, currency, and location factors.

Day 3: Value Engineering Fundamentals

- Value, function, and worth: core definitions.
- The value methodology job plan in six phases.
- Function analysis system technique (FAST) diagrams.
- Functioncostworth matrix construction.
- Creativity techniques for alternative generation.
- Evaluation and selection of VE proposals.
- VE team structure and workshop facilitation.

Day 4: Risk, Contingency, and Lifecycle Costing

- Identifying cost risk using risk registers and checklists.
- Qualitative and quantitative risk analysis for cost.
- Contingency estimation and management reserve setting.
- Monte Carlo simulation and confidence levels.
- Lifecycle costing and whole-life cost modelling.

- Discounted cash flow and net present value comparison.
- Value for money assessment and reporting.

Day 5: Tender Pricing, Reporting, and Implementation

- Tender pricing strategy and commercial considerations.
- Preliminaries, provisional sums, and dayworks pricing.
- Evaluating bids and normalising tender submissions.
- Cost reporting: commitment, accrual, and forecast.
- Presenting VE savings and cost reduction cases.
- Change control impact on estimate and budget.
- Building a personal cost and VE implementation plan.

Conclusion

By successfully completing Mastering Project Cost Estimation & Value Engineering Skills, participants will gain a disciplined method for pricing work accurately and improving value at every stage. They will have acquired practical skills in estimating techniques, quantity take-off, function analysis, lifecycle costing, and risk-based contingency setting. In addition, they will know how to defend cost decisions with evidence. Gentex Training Center designs this course so professionals can apply estimating and value engineering practice from the next working day.

FAQs for the Mastering Project Cost Estimation & Value Engineering Skills course

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Q1 What is the "Mastering Project Cost Estimation & Value Engineering Skills" course about?

It is a five-day programme on building reliable project estimates and improving value through structured value engineering. It covers estimating methods, quantity take-off, function analysis, lifecycle costing, contingency setting, and tender pricing.

Q2 What are the key benefits of the "Mastering Project Cost Estimation & Value Engineering Skills" course?

Participants produce more accurate estimates, reduce cost overruns, and identify savings without weakening performance. They set realistic contingencies, challenge unnecessary cost, and present cost decisions with evidence, which speeds up approvals and strengthens tender competitiveness.

Q3 What skills will I gain from the "Mastering Project Cost Estimation & Value Engineering Skills" course?

You will gain cost estimating and quantity take-off, value engineering and function analysis, risk-based contingency and lifecycle costing, and tender pricing and cost reporting.

Q4 What tools, methods, or standards are covered in the "Mastering Project Cost Estimation & Value Engineering Skills" course?

The course covers parametric, analogous, and bottom-up estimating, AACE International estimate classes, work and cost breakdown structures, rate build-up, the value methodology job plan, FAST diagrams, functioncostworth matrices, Monte Carlo analysis, lifecycle costing, and net present value comparison.

Q5 How is the "Mastering Project Cost Estimation & Value Engineering Skills" course applied in real-world practice?

Participants apply it by preparing basis-of-estimate documents, pricing tenders, running VE workshops on live designs, setting contingency levels, and reporting forecast cost to budget holders. Cost engineering and commercial teams use these methods on construction, industrial, and infrastructure projects.