

PROJECT COST ESTIMATING, BUDGETING & VALUE ENGINEERING SKILLS



GENTEX[®]
TRAINING CENTER



Introduction

Project Cost Estimating, Budgeting & Value Engineering Skills Training Course builds the three capabilities that decide whether a capital project delivers at the right cost. Participants work through estimating techniques, budget construction, cost baselines, and value engineering as one connected discipline. The programme links the accuracy of an estimate with the budget built from it and the design choices that reduce cost without losing function. As a result, learners gain a method that improves both estimate quality and delivered value. Furthermore, the course strengthens analytical rigour, cost judgement, and the reporting that withstands review and audit.

Project Cost Estimating, Budgeting & Value Engineering Skills Course Objectives

- Explain the estimating, budgeting, and value engineering relationship.
- Apply cost classification and cost behaviour in project estimating.
- Estimate using bottom-up, parametric, analogous, and three-point methods.
- Apply work breakdown structures (WBS) and cost breakdown structures (CBS).
- Set contingency, escalation, and risk allowances defensibly.
- Build a project budget with cost baselines, phasing, and S-curves.
- Apply earned value management (EVM): PV, EV, AC, CV, SV, CPI, and SPI.
- Calculate estimate at completion (EAC) and forecast to complete.
- Apply value engineering job plans and function analysis (FAST).
- Apply design-to-cost, life-cycle costing, and cost reduction without value loss.

Course Methodology

- Interactive sessions built on estimating, budgeting, and value engineering cases.

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- Workshops on estimate build-ups, budget construction, and VE study design.
- Group exercises on function analysis, cost reduction, and estimate review.
- Hands-on practice with cost schedules, S-curves, EVM reports, and VE worksheets.
- Simulation of an estimate review and a value engineering study session.
- Facilitator coaching and peer review on personal cost and value plans.

Who Should Take This Course

- Cost estimators, cost engineers, and quantity surveyors.
- Project managers and project controls professionals.
- Value engineering facilitators and design managers.
- PMO analysts handling project cost and budget reporting.
- Engineering and procurement professionals on capital projects.
- Consultants advising on estimating and value improvement.

Project Cost Estimating, Budgeting & Value Engineering Skills Course Outlines

Day 1: Cost Foundations and Estimating Techniques

- Cost classification: fixed, variable, direct, and indirect.
- Cost versus price, and the cost of capital in projects.
- Bottom-up estimating from a work breakdown structure (WBS).
- Parametric estimating with unit rates and scaling factors.
- Analogous estimating from comparable historical projects.
- Three-point estimating and accuracy ranges.
- Case discussion: an estimate that was accurate and a budget that was not.





Day 2: Contingency, Risk, and Estimate Quality

- Contingency versus management reserve.
- Risk-based estimating and Monte Carlo concepts.
- Escalation, currency, and location factors.
- Estimate classes, accuracy levels, and basis-of-estimate documents.
- Estimate review, challenge, and reconciliation techniques.
- Common estimating errors and how to prevent them.
- Workshop: building and defending a cost estimate with a basis document.

Day 3: Budget Construction and Cost Baseline

- From estimate to approved budget and cost baseline.
- Cost breakdown structure (CBS) and cost account design.
- Phasing, cash flow curves, and the S-curve.
- Capital versus operating treatment of project spend.
- Funding gates, approval routes, and release of funds.
- Earned value management (EVM): PV, EV, AC, CV, SV, CPI, and SPI.
- Exercise: building a cost-loaded budget, S-curve, and EVM baseline.

Day 4: Value Engineering Principles and Methods

- Value engineering history, purpose, and the VE job plan.
- Function analysis and the FAST diagram.
- Creativity techniques for generating alternatives.
- Evaluation methods: weighted scoring and life-cycle costing.
- Design-to-cost and target costing for project packages.

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- VE in construction, engineering, and capital projects.
- Simulation: running a value engineering study session.

Day 5: Cost Reduction, Reporting, and Value Governance

- Cost reduction versus cost cutting and protecting function.
- Whole-life and life-cycle costing decisions.
- Estimate at completion (EAC) and forecast to complete.
- Change control and its effect on the cost baseline.
- Cost and value reporting packs for executives.
- Audit readiness, cost traceability, and lessons learned.
- Capstone: presenting an estimating, budgeting, and value engineering plan.

Conclusion

By successfully completing Project Cost Estimating, Budgeting & Value Engineering Skills, participants will gain a practical command of estimating techniques, contingency setting, budget and cost baseline construction, and value engineering methods. They will acquire skills in function analysis, life-cycle costing, earned value analysis, and cost reduction that improve both estimate accuracy and delivered value. Gentex Training Center designs the programme to help project professionals estimate, budget, and engineer value with confidence.

FAQs





Q1 What is the "Project Cost Estimating, Budgeting & Value Engineering Skills" course about?

It builds the three capabilities that decide whether a capital project delivers at the right cost. The course spans cost foundations and estimating techniques, contingency, risk and estimate quality, budget construction and cost baseline, value engineering principles and methods, and cost reduction, reporting and value governance.

Q2 What are the key benefits of the "Project Cost Estimating, Budgeting & Value Engineering Skills" course?

You gain a method that improves both estimate quality and delivered value. The course strengthens estimate accuracy and contingency setting, tightens budget and cost baseline discipline, sharpens value engineering practice, and gives you reporting that withstands review and audit.

Q3 What skills will I gain from the "Project Cost Estimating, Budgeting & Value Engineering Skills" course?

You will develop four core skills: project cost estimating with contingency and risk allowances, budget and cost baseline construction with earned value baselines, value engineering with function analysis and life-cycle costing, and cost reduction with value governance and reporting.



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

The course covers cost classification and behaviour analysis, bottom-up, parametric, analogous and three-point estimating, work breakdown structures (WBS) and cost breakdown structures (CBS), contingency and management reserve, risk-based estimating and Monte Carlo concepts, escalation and currency factors, estimate classes and basis-of-estimate documents, estimate review and reconciliation techniques, cost baselines and phasing, cash flow curves and S-curves, capital versus operating treatment, funding gates, earned value management (PV, EV, AC, CV, SV, CPI, SPI), the value engineering job plan, function analysis and FAST diagrams, creativity and evaluation techniques, weighted scoring, life-cycle and whole-life costing, design-to-cost and target costing, estimate at completion (EAC) and forecast to complete, change control, cost and value reporting packs, and audit readiness and cost traceability.

Q5 How is the "Project Cost Estimating, Budgeting & Value Engineering Skills" course applied in real-world practice?

Participants apply it to real work such as building and defending a cost estimate with a basis of estimate, converting it into a cost-loaded budget and S-curve, running a value engineering study on a design package, calculating estimate at completion after a change, and presenting a cost and value report to executives. The same methods support life-cycle costing decisions and post-project lessons learned.