MERCURY

# Advanced Project Cost Estimating, Budgeting, and Value Engineering Skills

10 – 14 October 2027
Muscat (Oman)



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# Advanced Project Cost Estimating, Budgeting, and Value Engineering Skills

**Ref:** 16426_1070885 **Date:** 10 – 14 October 2027 **Location:** Muscat (Oman) **Fees:** 5500 Euro

## Introduction:

This Advanced Project Cost Estimating, Budgeting, and Value Engineering Skills course equips professionals with advanced skills in project cost estimating, budgeting, and value engineering. Participants will explore comprehensive methodologies to accurately forecast project costs, develop effective budgets, and apply value engineering principles to enhance project value. The curriculum covers various estimating techniques, contract types, procurement methods, and value engineering phases.

The Advanced Project Cost Estimating, Budgeting, and Value Engineering Skills program provides a holistic understanding of cost management throughout the project lifecycle. It emphasizes practical applications, real-world scenarios, and strategic decision-making to optimize project outcomes. Participants will be adept at integrating cost estimating and value engineering practices to deliver projects that meet financial and functional objectives.

## Targeted Groups:

This Advanced Project Cost Estimating, Budgeting, and Value Engineering Skills training targets professionals seeking specialized knowledge and skills:

- Project Managers aiming to enhance cost management capabilities.
- Cost Estimators seeking to refine estimating techniques.
- Budget Analysts are involved in project financial planning.
- Procurement Specialists focusing on cost-effective sourcing.
- Contract Administrators manage various contract types.
- Engineers interested in cost optimization strategies.
- Architects are involved in project budgeting and cost control.
- Construction Managers oversee project financials.
- Financial Controllers in construction-related industries.
- Stakeholders aiming to understand cost implications in projects.

## Course Objectives:

Participants will achieve the following objectives by completing the Advanced Project Cost Estimating, Budgeting, and Value Engineering Skills course:

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- Develop proficiency in estimating project costs across various phases.
- Understand and apply different estimating techniques, including PERT and parametric methods.
- Analyze and select appropriate contract types and procurement methods.
- Implement budgeting processes aligned with project design phases.
- Apply value engineering principles to optimize project value.
- Evaluate project risks and incorporate contingencies effectively.
- Utilize cost indices and learning curves in cost estimation.
- Prepare and manage project budgets, including pre-construction services.
- Conduct bid evaluations and negotiate contracts efficiently.
- Communicate cost-related information effectively to stakeholders.

## Targeted Competencies:

Participants will gain the following competencies during the Advanced Project Cost Estimating, Budgeting, and Value Engineering Skills program:

- Advanced skills in cost estimating and budgeting techniques.
- Ability to apply value engineering to enhance project value.
- Competence in selecting and managing various contract types.
- Expertise in risk analysis and contingency planning.
- Proficiency in using cost indices and learning curves for estimation.
- Capability to prepare and manage comprehensive project budgets.
- Skill in evaluating bids and negotiating contracts effectively.
- Aptitude for communicating complex cost information to stakeholders.
- Understanding of procurement methods and their financial implications.
- Knowledge of lifecycle costing and its application in projects.

## Studying Scenarios:

In this Advanced Project Cost Estimating, Budgeting, and Value Engineering Skills training, participants will develop their skills through the analysis of the following scenarios:

- Estimating costs for a multi-phase construction project.
- Developing a budget for a large-scale infrastructure development.
- Applying value engineering to reduce costs in a design-build project.
- Evaluating bids for a public sector construction project.
- Negotiating a guaranteed maximum price contract for a commercial building.
- Assessing the impact of location and size adjustments on project costs.
- Implementing risk analysis and contingency planning in a high-risk project.
- Utilizing learning curves to estimate durations and costs in manufacturing projects.
- Applying cost indices to adjust estimates for inflation.
- Developing a pre-construction services estimate for a complex project.

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## Course Content:

### Unit 1: Cost Estimating Fundamentals:

- Understanding the estimated project lifecycle.
- Exploring phases of the design process: programming, schematic design, design development, and construction documents.
- Assessing and estimating accuracy by phase.
- Developing conceptual cost estimates.
- Creating rough order of magnitude estimates.
- Utilizing assembly cost estimates and cost indices.
- Preparing semi-detailed and definitive estimates.
- Implementing basic estimating procedures.
- Understanding different contract types: lump-sum, unit-price, cost-plus, and time-and-materials.
- Exploring bid and negotiated methods.
- Conducting quantity take-offs.
- Analyzing procurement methods and pre-construction services.
- Performing risk analysis and incorporating contingencies.

### Unit 2: Broad Scope Estimating Techniques:

- Adjusting project costs for broad scope estimates.
- Applying the PERT project cost analysis.
- Utilizing standard distribution curves and Z-value tables.
- Estimating project unit costs using standard deviation.
- Evaluating project unit costs at required probabilities.
- Adjusting estimates based on previous projects and time factors.
- Reviewing the future and present value of money.
- Calculating equivalent annual interest rates and compound interest.
- Applying location and size indices for construction.
- Implementing economic price adjustments.
- Estimating durations and costs using learning curves.

### Unit 3: Budget Estimating Process:

- Estimating costs by design phase: programming, schematic design, and design development.
- Estimating pre-construction services.
- Developing requests for proposals and pre-construction services estimates.
- Creating pre-construction services contracts.
- Managing budget control logs.

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## Unit 4: Bid Contract Estimating Process:

- Conducting pre-estimate activities.
- Estimating processes for lump-sum bids.
- Developing work breakdown structures.
- Organizing, estimating teams, and scheduling estimating work.
- Coordinating with subcontractors and major suppliers.
- Utilizing estimating forms and ensuring accuracy.
- Pricing self-performed work and applying pricing factors.
- Summarizing materials, labor, and subcontractor work.
- Reviewing project summary schedules.
- Applying alternative techniques and estimating general conditions.
- Completing bid summaries and final mark-ups.
- Validating estimates and estimating subcontractor work.

## Unit 5: Unit Price Estimating:

- Developing unit price bid forms.
- Estimating direct costs: materials, labor, indirect labor, and subcontractors.
- Creating recap summary sheets.
- Determining direct-to-indirect cost factors.
- Establishing mark-up determinations.
- Managing variation-in-quantity contract provisions.
- Conducting risk analysis and bid finalization.

# Final Insights & Key Takeaways:

This course provides a comprehensive framework for mastering advanced project cost estimating, budgeting, and value engineering skills. Participants will gain the expertise necessary to optimize project financial performance and deliver value-driven outcomes.