

# **Fundamental of Project Cost Estimation**

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# **Fundamental of Project Cost Estimation**

### Introduction:

The estimating techniques covered in this course will provide delegates with the necessary skills to forecast accurately the anticipated costs of projects with a focus on estimates for pre-construction services, estimating sub-contractor work, estimating general conditions, pricing self-performed work, and estimating negotiated contracts.

The development of reliable cost estimates during the design and early conceptual stages of a proposed project is of critical importance since the decision to proceed with a project is often based almost exclusively on early conceptual cost estimates. These estimates also provide the basis for the cash flow projections and forecasts used during the project feasibility study.

## Course Objectives:

- 1. Apply techniques used in Project estimating, from the conceptual stage to the final detailed estimate
- 2. Understand the different types of contracts based on the distribution of risk between contracting parties
- 3. Synthesize innovative incentive arrangements to get the best results from the contract
- 4. Apply proper risk analysis to effectively mitigate risks at minimal costs, and to determine appropriate contingencies for residual risks
- 5. Prepare lump-sum, unit-price, cost plus, and time-and-materials estimates and contracts

## Who Should Attend?

The training is specifically aimed at project managers/directors, finance project executives/managers, project engineers, cost estimators, project cost engineers, discipline leads, members of the purchase department, members of a tendering team, work preparatory and all who are involved in technical projects, cost estimation, cost control and planning, and contract review in their organizations.

## Course Outline:

#### Day One

#### **Cost Estimating Basics**

- 1. Basic Project Management definitions
- 2. Cost Selection Methods
- 3. Typical project terminology & setting up for success
- 4. Project cost management, Cost Control
- 5. Resource & Cost Allocation
- 6. Understanding project management inputs to cost estimation

#### Day Two

#### **Pricing, Contracts and Risk**

- 1. Project management inputs to cost budgeting
- 2. Resource Requirements
- 3. Direct & Indirect Project Costs
- 4. Probability and Standard Deviation Formulae
- 5. Contract types according to risk distribution
- 6. Fixed Price Contracts, Cost-Plus Contracts

## Day Three

## **Developing the Project Budget & Cost Control**

- 1. Risk Identification, Analysis & Management
- 2. Qualitative Risk Analysis
- 3. Quantitative Risk Analysis
- 4. Risk & Probability Matrix
- 5. Risk Response Strategy
- 6. Cash Flow management

## **Day Four**

## **Approximate & Detailed Estimating Methods**

- 1. Material Estimating
- 2. Civil/Construction Estimating

- 3. Labor estimating, Detailed estimating with labor crews
- 4. Procurement Management
- 5. Risk distribution in contracting
- 6. Project risk profiles

## **Day Five**

### **Advanced Estimating Methods**

- 1. Building Information Modeling (BIM)
- 2. Cost Estimating Relationships (CER)
- 3. Computer Estimating
- 4. Control Charts