



Cost Estimation Engineering

10 - 14 Feb 2025
Geneva (Switzerland)



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Ref.: 15275_311524 **Date:** 10 - 14 Feb 2025 **Location:** Geneva (Switzerland) **Fees:** 5200 Euro

Introduction:

With years of work in the fields of project management, procurement, and computation, there are common threads in methodology and practice in almost every computational situation. Whether it's an industrial process, a manufactured product, a multi-million dollar construction project, or a business service to be evaluated, certain principles, practices, and procedures apply. This document describes those principles, practices, and procedures. It provides a simple, low-cost, step-by-step cost estimation method. It also points out possible pitfalls, problems, errors, and inaccuracies in cost estimates that can make the difference between success and failure. The course is organized to help you get the big picture and dive deeper into each step of the cost estimating process. This is not a highly technical and sophisticated paper on the mathematical and statistical aspects of cost estimation. Rather, this course is a simple, straightforward presentation of basic concepts and the steps required to create management, labor-time, materials-based, and parametric cost estimates. It is designed for all professionals who are cost estimators, price estimators, cost analysts, pricing analysts, or system cost analysts, whether you are a university, small business, large enterprise, or government. It is equally useful for people working in institutions. It is a necessary part of the library of any company or organization interested in making lasting profits and getting the most results for the money spent. The principles, practices, and procedures are presented in this course. After reading and applying, you will have a better understanding of the relationship between what a work activity is and the resources required to complete that activity. You can see the important benefits of good estimating. Using a systematic approach to estimate the cost of labor activity or labor performance allows you to assess the value of labor to you as a producer and to your consumers.

Targeted Groups:

- Finance Managers
- Budget Holders
- Project Managers
- Professional Engineers
- People providing direct support to the above

Course objectives:

After completing this course, participants will be able to:

- Estimate costs proactively
- Practicing cost reduction techniques
- Effective cost estimates for projects
- Make better use of cost budgets, plans and forecasts
- Understanding project evaluation

Course Content

Unit 1: Why Cost Estimating

- Estimating in a World of Limited Resources
- Increased Productivity as a Solution
- Productivity and the Profit Motive
- At Stake, the Organization's Reputation
- In-Depth Cost Estimating
- Possible: A Standardized Basic Estimating Procedure

Unit 2: The Basics of Estimating

- Four Kinds of Work Output
- Cost Estimating Defined
- "Cost" and "Price" Explained
- The Estimating Process: Ingredients and Tools Required
- The Cost Estimator: The Human Element
- The Anatomy of an Estimate
- Discussion of Types of Costs
- Collecting the Ingredients of the Estimate

Unit 3: Defining The Work

- The First Questions to Ask and Why
- The Estimate Skeleton: The Work Breakdown Structure
- The Hierarchical Relationship of a Work Breakdown Structure
- Functional Elements
- Physical Elements
- Treatment of Recurring and Nonrecurring Activities
- Work Breakdown Structure Interrationships
- Defining the Estimate Ingredients
- Building in Cost-Effectiveness

Unit 4: The Tools Required For Estimating

- Four Basic Tools
- Information to Be Collected Before Starting an Estimate
- Methods Used in the Estimating Process
- The Technology Improvement Function
- Establishing an Estimate Schedule
- Needed Estimating Skills

Unit 5: Formulating The Schedule, Estimate, Elements, And Ground Rules

- Timing: Key to a Cost-Competitive Output
- Delivering or Availability Keyed to Need Dates
- Developing a Schedule
- Techniques Used in Schedule Planning
- Time Phasing of Skill Interactions Within a Multioutput Organization
- Treatment of Long Lead-Time Items
- Product Development and Production Schedules
- Establishing Estimate Elements
- Analysis of a Request for Proposal
- Work Breakdown Structure Dictionary
- Treatment of Other Necessary Ground Rules

Unit 6: Estimating Direct Material Costs and Labor-Hours

- Estimate Basic Engineering Material Costs
- Estimating Engineering Activities
- Manufacturing/Production Engineering
- Estimating Manufacturing/Production, Assembly and Construction Activities
- Manufacturing Activities
- Construction Activities
- In-Process Inspection
- Computer Software Cost Estimating
- Labor Allowances
- Estimating Supervision, Direct Management, and Other Direct Charges
- The Use of Factors in Estimating

Unit 7: Estimating Labor Rates, Indirect Costs, and Administrative Costs

- Labor Rates
- Available Labor Rate Information
- Indirect Costs
- Overhead Costs Examined
- General and Administrative Costs
- Bid and Proposal Costs and Independent Research and Development Costs



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