Value Engineering:

Practical Applications for Design, Construction, Maintenance & Operations

Energy Milestones Corporation

Advancing Professionals to the next level

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Value Engineering: Practical Applications for Design, Construction, Maintenance & Operations

Overview

Value engineering, also known as value analysis, is a competitiveness-enhancing method that focuses on maximising the value of a product (process, project) by making sure it fulfils the client's needs at the lowest cost possible. The approach is systematic and includes a multi-step job plan, which in turn utilizes various tools to conduct product or process analysis. The training provides an overview of the entire job plan, including each phase, and uses a case study approach to assist participants in learning the methodology. The training explains the various applications of the method, the potential goals that can be achieved, and when value engineering is most useful. Finally, the instructor outlines how to implement a value management program in an organisation.

Course Objectives

- Acquire in-depth knowledge of value engineering.
- Introduce the overview of value engineering, consisting of objectives, methodology and techniques
- Classify the practical applications of value engineering using the project scope budget.
- CIAPB and preparation of cost models, planning for value engineering services, function analysis, etc.
- Apply value engineering to products, processes, and projects
- Identify and measure the needs that products and processes have to fulfil
- Identify the solution with the best value for all stakeholders

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Course Content

1. Introduction: A Briefing
   - The Objectives of Value Engineering
   - The Reasons for Unnecessary Costs
   - When to Apply Value Engineering
   - VE Methodology and Techniques
   - Interface with Other Programs
   - Demonstrated Impact of VE

2. Value Engineering: Practical Applications Project Scope and Budget
   - Requirements for Corrosion to Occur
   - Metallurgical Factors
   - Forms of Corrosion
   - Corrosion Control Methods
   - Material Selection
   - Environmental Modification
   - Protective Coatings
   - Cathodic Protection

3. The Capitalised Income Approach to Project Budgeting (CIAPB)
   - CIAPB Objectives
   - Measuring Property Value
   - The Meaning of Capitalisation
   - The Capitalisation Process
   - The Need for Cost Control

4. Preparation of Cost Models
   - Making Models
   - Construction Cost Models
   - Other Resources
   - Types of Models

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Course Content

5. Planning for Value Engineering Services
   - VE Objectives
   - Level of Effort
   - VE and Total Project Management
   - Team Selection
   - The VE Job Plan

6. Function Analysis
   - Classifying Function
   - Defining Functions
   - Project Level Function Analysis System
   - Techniques (FAST) Diagram

7. Creativity and Interpersonal Skills
   - Creativity and Fixation
   - Interpersonal Skills
   - Human Factors
   - Creativity throughout the Job Plan
   - The Generation of Ideas
   - Delphi Technique
   - Value Engineering—A Crafted Strategy

8. Life Cycle Costing
   - Decision Makers' Impact on LCC
   - LCC and Total Building Costs
   - LCC Terminology and Examples
   - LCC Methodology
   - Application of LCC to Buildings

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Course Content

9. Integrating VE into the Construction Industry
   - Planning and Design
   - Construction
   - Maintenance and Operations (M&O)
10. VE Applications to Risk Assessment and Analysis
   - Risk Assessment
   - Risk Analysis

Targeted Audience

This course is intended for product engineers, manufacturing and continuous improvement engineers, industrial and general managers, operations and product development managers and technicians.

Course Methodology

Facilitated by an experienced professional trainer, this training course will be conducted as a highly interactive workshop session. A variety of training methodologies and facilitation techniques will be used before and during the course whenever applicable. These methods are aimed at enhancing individual and group interaction while maximizing learning. Some of these methods are:

- Online Pre-post Test
- Colorful Visual Aids
- Gamification
- Self-Assessment Instruments
- Simulations
- Case Studies
- Videos
- Group Exercises & Discussions
- Role-plays
- Indoor & Outdoor games