

Introduction

Value Engineering (VE) is a creative and structured methodology used to optimize the value of a project, focusing on reducing unnecessary costs while maintaining or enhancing its functionality. The goal of VE is not to opt for the cheapest solution but to deliver the best value for money by maximizing return on investment throughout the project lifecycle. This course is designed to provide participants with expert guidance on how to secure real benefits and cost savings by implementing VE in their projects. It emphasizes developing project scope, charter, cost estimates, plans, and budgets through the application of VE principles.

The course adopts a systematic approach, with a step-by-step methodology to support VE techniques from initiation and planning to application. Participants will explore essential elements, such as forming and managing integrated multi-disciplinary teams, capturing stakeholder requirements, conducting life cycle costing analysis, and producing comprehensive project plans.

What is Value Engineering in Project Management?

Value Engineering in project management is a systematic method for improving the value of goods, products, and services by examining their function. The relationship between function and cost is central to VE. Value can be increased by improving the function of a project or reducing its cost. A key principle of VE is to maintain basic functions without compromising them when pursuing value improvements.

The Value Engineering Certification

Professionals aiming to become certified in value engineering will benefit from VE training courses that provide a rigorous study of VE methodologies, the VE/VA process, and best practices for applying VE to projects. Certification culminates in an examination and is widely recognized by industry bodies.

Targeted Groups

- Project or Program Sponsors
- Project Managers
- Cost Estimators
- Cost Controllers
- Engineers
- Designers
- Project Staff

- Individuals involved in project initiation, engineering design, and critical project assessments

Course Objectives

By the end of this course, participants will be able to:

- Understand the fundamental concepts of Value Engineering and Analysis.
- Appreciate how VE supports effective project management.
- Identify the necessary information to develop a project scope.
- Gather and organize information and costs related to key project elements.
- Capture and incorporate stakeholder input in developing project charters and plans.
- Assess and evaluate the relationships between cost, value, and function.
- Report effectively to senior management and stakeholders.
- Apply life cycle costing principles proficiently.
- Present convincing cases in support of project alternatives.
- Compare the costs of alternatives to ensure the most economical project at the desired quality level.
- Maintain control over the progressive budgeting process.
- Manage the interface between value-adding phases and management expectations.
- Use systematic and innovative methodologies to optimize project value and costs.
- Promote cost-consciousness among project teams.
- Focus on functions to develop creative thinking for cost reduction.

Targeted Competencies

By the end of this course, participants will enhance the following competencies:

- Framing project decisions with value engineering in mind.
- Bringing VE into the project initiation and planning processes.
- Evaluating alternatives based on cost and value throughout the project lifecycle.
- Identifying barriers to creative thinking in project challenges.
- Assessing the results of brainstorming sessions effectively.
- Adhering to a structured, logical sequence of steps to solve project challenges.
- Eliminating unnecessary costs without compromising project quality.

Course Content

Unit 1: Framework for Applying Value Engineering in Projects

- What is value engineering and why is it important?
- Defining VE concepts and principles
- Purpose of VE and Value Analysis (VA)
- Strengths and weaknesses of VE
- When and how VE is applied
- Project definition and initiation
- Developing the project scope and charter
- Lifecycle costing techniques
- Stakeholder analysis and management
- Understanding relationships between value, cost, and worth
- Initiating the VE process
- Overview of VE phases
- The information phase - steps and procedures
- Developing a VE job plan

Unit 2: The Function Analysis Phase - Expressing Project Functional Needs and Constraints

- The need for function analysis in projects
- Defining project constraints, relationships, and trade-offs
- Conceptual cost estimating techniques
- Function-cost-worth analysis
- Developing FAST (Function Analysis Systems Technique) diagrams to identify critical project components
- Applying the technical FAST model for project value analysis
- Case study analysis
- Cross-functional project team approach

Unit 3: The Creative Phase - Inspiring Creativity in Your Project Team

- Creativity and creative thinking within the project environment
- Individual vs. group thinking for better project decisions
- Applying creativity techniques to optimize project value
- Overcoming blocks to creativity within the team
- Brainstorming project solutions

- Reaching consensus and leveraging team collaboration
- Identifying and addressing project risks
- Prioritizing project decisions using the "Delphi" technique
- Using force-field analysis in project problem-solving
- Output of the creative phase

Unit 4: The Evaluation Phase - Making Informed Project Decisions

- Screening project ideas
- Methods for evaluating project ideas
- Quantitative evaluation using objective data
- Subjective evaluation with project-related criteria weighting
- Revisiting lifecycle costing analysis
- Incorporating inflation in project economic analysis
- Performing project risk and scenario analyses
- Risk lifecycle simulation modeling for best and worst case scenarios
- Pitfalls of existing economic models
- Incremental benefit-cost analysis for project evaluation
- Making effective decisions in project environments
- Output of the evaluation phase

Unit 5: The Planning and Reporting Phases - Getting Results Through Effective Communication

- Developing and assessing VE proposals to optimize project value
- Creating action plans and assigning roles and responsibilities
- Reporting findings to senior management and stakeholders
- Mastering oral presentation techniques and interpersonal skills
- Strategies for successful project plan execution
- Incorporating VE into the early project phases
- Integrating VE with continuous improvement techniques

This course equips participants with the tools and methodologies necessary for applying value engineering to projects, allowing them to optimize value, reduce costs, and enhance decision-making. By developing creative solutions and assessing alternatives, project managers can improve their projects' outcomes while maintaining quality and meeting stakeholder expectations.



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