

## Value Engineering

### Overview

Value engineering is a set of disciplined procedures designed in a clear and rigorous manner to determine the optimal value for both the initial and long-term investment. It was first used in the manufacturing industry more than 70 years ago and has since been widely used in other industries for many years.

Value engineering is not simply a design and comparison review or cost-cutting exercise. Rather, it is a systematic, creative effort that analyzes project requirements to achieve essential functions at the lowest total costs (e.g., capital, staffing, energy, and maintenance) over the project's lifetime. Through collaborative research, utilizing experienced, multidisciplinary teams, value and cost can be optimized by examining alternative design concepts, materials, and methods without interfering with the client's functional and value objectives.

Value engineering can be applied at any point in a project, even in construction projects. However, it is typically applied earlier and results in a higher return on the time and effort invested.

In most cases, value engineering identifies and eliminates unnecessary expenditures, increasing value for manufacturers and their customers.

### Methodology

This is an interactive course that includes lectures, case studies, technical process instruction, and complementary discussions related to various industries and implementation challenges.

### Course Objectives

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

Implement value engineering in the workplace

Increase asset reliability and availability to world-class standards

Reduce unplanned downtime and production interruptions

Reduce maintenance costs by 50-70%

Learn global benchmarking standards.

## Target Audience

Engineering professionals with at least three years of experience. This includes managers, supervisors, maintenance engineers, operational excellence officers, reliability engineers, facility managers, engineering managers, manufacturing managers, production managers, operations managers, project managers, asset managers, and quality assurance personnel.

## Targeted Competencies

Value Techniques

Budget Analysis

Project Lifecycle Costing

Project Management

## Introduction to Value Engineering (VE)

Objectives of Value Engineering

When Applying Value Engineering

Impact of Value Engineering

Introduction to Project Scope

Budget Analysis

Elements of Project Budgeting

## Introduction to Value Engineering

Value Techniques

The Concept of Total Value Management

Stage Relationships in Value Management in Design

Value Categories

Value Types

Areas of Application of Value Engineering

## Job Evaluation

Primary and Secondary Functions

## FAST (Function Analysis Systems Technique)

FAST Procedures

FAST Examples

### Six-Step Action Plan in

Information

Speculation

Planning

Action

Reporting

Implementation

### Speculation Phase

Creativity

Brainstorming

Nominal Group Technique

Cause and Effect Analysis

Pareto Diagrams

Total Cost Concept

Lifecycle Costing (LCC)

### Building on Speculation

Nature of Information

Elements of Manufacturing Costs

VE Project Workshops

For Protection

VE Plan Review

Report Format