MERCURY

Value Analysis & Value Engineering Fundamentals

9 – 13 May 2027
Manama (Bahrain)



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Introduction

The Value Analysis & Value Engineering Fundamentals course provides participants with a structured and in-depth understanding of how value-driven methodologies enhance organizational performance and cost efficiency. The course explores systematic approaches to improving functions, reducing unnecessary costs, and optimizing resources without compromising quality or performance. Participants will gain theoretical insight into value-based decision-making across products, processes, and services. The program emphasizes analytical thinking, functional evaluation, and strategic cost management principles applicable across industries. It also addresses integrating value engineering practices into project planning and operational frameworks. Participants will have a solid conceptual foundation to support sustainable value improvement initiatives.

Targeted Groups

This Value Analysis & Value Engineering Fundamentals training targets professionals seeking specialized knowledge and skills:

- Engineers involved in design, production, or project planning.
- Project managers oversee cost, scope, and performance.
- Procurement and supply chain professionals managing value-based sourcing.
- Quality and process improvement specialists.
- Operations and maintenance professionals.
- Cost control and financial analysis staff.
- Technical consultants and analysts.
- Professionals engaged in continuous improvement initiatives.

Course Objectives

Participants will achieve the following objectives by completing the Value Analysis & Value Engineering Fundamentals course:

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- Understand the principles of value analysis and value engineering.
- Explain the relationship between function, cost, and performance.
- Identify unnecessary costs within products and processes.
- Apply functional analysis techniques in theoretical contexts.
- Evaluate value improvement opportunities systematically.
- Analyze cost drivers and their impact on lifecycle value.
- Interpret value study phases and structured methodologies.
- Compare value engineering with traditional cost reduction approaches.
- Assess risks and trade-offs in value-based decisions.
- Align value engineering concepts with organizational objectives.
- Recognize the role of multidisciplinary collaboration.
- Understand value management in projects and operations.
- Develop structured thinking for value-focused problem solving.

Targeted Competencies

Participants will gain the following competencies during the program:

- Functional thinking applied to products and services.
- Analytical evaluation of cost versus performance.
- Structured problem definition and value assessment.
- Interpretation of value engineering study frameworks.
- Cost optimization reasoning without quality loss.
- Lifecycle cost awareness and value sustainability.
- Conceptual use of function analysis systems.
- Strategic alignment of value initiatives.
- Theoretical application of value improvement techniques.
- Professional communication of value-based findings.

Studying Scenarios

In this training, participants will develop their skills through the analysis of the following scenarios:

- Evaluating product design alternatives for functional efficiency.
- Assessing process workflows for unnecessary cost elements.
- Reviewing project plans to improve value delivery.
- Comparing material selection options based on function and cost.
- Analyzing service models for performance enhancement.
- Examining lifecycle cost scenarios in capital projects.
- Reviewing organizational value improvement initiatives.

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Course Content

Unit 1: Foundations of Value Analysis and Value Engineering

- Definition and evolution of value analysis and value engineering concepts.
- Core principles of value-focused management approaches.
- Understanding value as a balance of function, cost, and performance.
- Differences between value engineering, value analysis, and cost cutting.
- Historical development and global adoption of value methodologies.
- Role of value engineering in modern organizations.
- Strategic importance of value-based decision-making.

Unit 2: Functional Analysis and Value Thinking

- Concept of function in value analysis methodologies.
- Classification of basic and secondary functions.
- Functional performance measurement principles.
- Introduction to function analysis systems techniques.
- Logical relationship between functions and customer requirements.
- Identifying function-cost mismatches.
- Functional hierarchy and system-level thinking.

Unit 3: Cost Analysis and Value Improvement Concepts

- Understanding cost structures in products and processes.
- Direct, indirect, and lifecycle cost components.
- Cost drivers and their influence on value outcomes.
- Relationship between cost reduction and value enhancement.
- Avoiding false economies and performance degradation.
- Evaluating alternatives using value-based criteria.
- Integrating cost analysis with functional evaluation.

Unit 4: Value Engineering Methodology and Study Phases

- Overview of structured value engineering job plans.
- Information phase and data collection principles.
- Functional analysis phase objectives and outputs.
- Creative phase for generating value alternatives.
- Evaluation phase for comparing proposed solutions.
- Development phase and theoretical implementation planning.
- Presentation and reporting of value study results.
- Role of teamwork and multidisciplinary collaboration.

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Unit 5: Applications of Value Analysis and Value Engineering

- Value engineering in product design and development.
- Application in construction and infrastructure projects.
- Process optimization in manufacturing and operations.
- Value analysis in service industries and support functions.
- Integration with quality management and lean concepts.
- Value management across project lifecycle stages.
- Organizational governance and value culture development.
- Long-term benefits of sustainable value improvement.

Final Insights & Key Takeaways

This course provides a theoretical foundation in value analysis and value engineering principles applicable across industries. Participants leave with structured thinking capabilities to support informed, value-driven decision-making and sustainable cost optimization.