Value Engineering and Lifecycle Costing in Projects Training Course

Ref: #PMP3751

Course Introduction / Overview:

This course provides a comprehensive framework for mastering Value Engineering (VE) and Lifecycle Cost Analysis (LCCA), two critical disciplines for optimizing project outcomes. In today's competitive landscape, delivering projects on budget is not enough; organizations must maximize value and ensure long-term economic efficiency. This training moves beyond basic cost-cutting to instill a systematic methodology for enhancing function and performance while reducing the total cost of ownership. We will explore the foundational principles established by pioneers like Lawrence D. Miles, the originator of value analysis, and delve into modern applications across various industries. Participants will learn to apply the structured VE job plan and conduct robust LCCA, referencing standards such as ASTM E917 for measuring life-cycle costs. BIG BEN Training Center has designed this program to be intensely practical, equipping professionals with the analytical tools and strategic mindset needed to challenge assumptions, foster innovation, and deliver projects that offer superior value from inception to disposal. This course is the definitive guide to integrating value-driven decision-making into every phase of the project management lifecycle.

Target Audience / This training course is suitable for:

- Project Managers and Project Directors.
- Engineers from all disciplines (Civil, Mechanical, Electrical, etc.).
- Cost Estimators and Quantity Surveyors.
- Procurement and Contract Managers.
- Asset and Facility Managers.
- Financial Analysts and Planners.
- Architects and Design Professionals.
- Operations and Maintenance Supervisors.
- Government Officials involved in public works and infrastructure.
- Consultants in project management and cost control.

Target Sectors and Industries:

- Construction and Real Estate Development.
- Manufacturing and Industrial Production.
- Oil, Gas, and Energy.
- Government Agencies and Public Sector Undertakings.
- Infrastructure and Transportation.
- Aerospace and Defense.
- Information Technology and Telecommunications.
- Healthcare and Pharmaceuticals.
- Utilities and Environmental Services.

Target Organizations Departments:

- Project Management Office (PMO).
- Engineering and Design.
- Procurement and Supply Chain Management.
- Finance and Accounting.
- Operations and Maintenance.
- Capital Planning and Asset Management.
- Quality Assurance and Control.
- Strategic Planning and Business Development.
- Facilities Management.

Course Offerings:

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

- Apply the systematic Value Engineering job plan to any project.
- Conduct a comprehensive function analysis using the Function Analysis System Technique (FAST).
- Develop detailed Lifecycle Cost models to evaluate project alternatives.
- Calculate key economic metrics such as Net Present Value (NPV) and Total Cost of Ownership (TCO).
- Identify and eliminate unnecessary costs without sacrificing quality or performance.
- Lead and facilitate effective Value Engineering workshops and brainstorming sessions.
- Integrate VE and LCCA principles into the project planning, design, and procurement phases.
- Evaluate risk and uncertainty in long-term cost projections.
- Prepare compelling reports and presentations to communicate value-enhancing recommendations to stakeholders.
- Enhance project decision-making by balancing initial investment with long-term operational costs.

Course Methodology:

The training methodology at BIG BEN Training Center is designed to be immersive, engaging, and highly practical, ensuring that participants can immediately apply their learning in a professional context. This course moves beyond traditional lectures by adopting a blended learning approach that combines expert-led instruction with interactive, hands-on activities. A significant portion of the program is dedicated to analyzing real-world case studies from diverse industries, allowing participants to dissect complex problems and understand the practical application of Value Engineering and Lifecycle Cost Analysis. Collaborative group exercises and workshops are central to our approach, fostering teamwork and enabling participants to practice techniques like function analysis and creative idea generation in a supportive environment. Participants will engage in simulations of VE workshops, developing and presenting their findings. Continuous feedback is provided by the instructor and peers to refine understanding and build confidence. This dynamic and participatory learning environment ensures a deep and lasting comprehension of the tools and strategies needed to drive value and efficiency in any project.

Course Agenda (Course Units):

Unit One: Foundations of Value and Lifecycle Cost Management

- Introduction to Value Engineering (VE) and its history.
- Core concepts of value, function, and cost.
- The strategic importance of VE in project management.
- Introduction to Lifecycle Cost Analysis (LCCA) and Total Cost of Ownership (TCO).
- The relationship and synergy between VE and LCCA.
- Identifying key stakeholders and their role in the value process.
- Overcoming common barriers to implementing VE and LCCA.

Unit Two: Mastering the Value Engineering Job Plan

- Detailed overview of the multi-phase VE job plan.
- Information Phase: Gathering data and defining the project scope.
- Function Analysis Phase: Defining and classifying functions.
- Creating Function Analysis System Technique (FAST) diagrams.
- Creative Phase: Brainstorming techniques for generating alternatives.
- Evaluation Phase: Analyzing and shortlisting viable ideas.
- Development Phase: Developing detailed proposals for value improvements.

Unit Three: Principles and Techniques of Lifecycle Cost Analysis

- Establishing the LCCA study scope and objectives.
- Developing a comprehensive Cost Breakdown Structure (CBS).
- Techniques for data collection and cost estimation.
- Economic analysis methods: Present Value, Annual Value, and Rate of Return.
- Incorporating inflation, discount rates, and the time value of money.
- Sensitivity and risk analysis in LCCA.
- Using software and tools for LCCA modeling.

Unit Four: Integrating VE and LCCA in the Project Lifecycle

- Applying VE and LCCA during the conceptual and design phases.
- Value Engineering in procurement and construction.
- Using LCCA for asset management and capital replacement decisions.
- Case Study 1: VE and LCCA in a major infrastructure project.
- Case Study 2: Applying value methodology in a manufacturing process.
- Developing a business case for value-driven proposals.
- Aligning VE/LCCA outcomes with organizational strategic goals.

Unit Five: Advanced Applications, Workshop Facilitation, and Reporting

- Facilitating a successful Value Engineering workshop.
- Managing team dynamics and fostering a creative environment.
- Advanced FAST diagramming techniques.
- Communicating VE and LCCA findings to senior management and clients.
- Developing clear and persuasive recommendation reports.
- Monitoring the implementation of approved value proposals.
- Course review, final project presentation, and action planning.

FAQ:

Qualifications required for registering to this course?

There are no requirements.

How long is each daily session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

Something to think about:

How might the principles of value engineering be applied not just to physical projects, but also to organizational processes and business models to drive systemic efficiency?

What unique qualities does this course offer compared to other courses?

This course distinguishes itself by providing a deeply integrated and holistic perspective on project value, moving beyond the siloed treatment of Value Engineering (VE) and Lifecycle Cost Analysis (LCCA). Unlike programs that focus on one discipline, we emphasize the powerful synergy between the two, teaching participants how to use them in concert to achieve optimal project outcomes from both a functional and long-term financial standpoint. The curriculum is built around a practical application framework, prioritizing hands-on workshops and the dissection of complex, real-world case studies over purely theoretical instruction. Participants will not just learn the VE job plan; they will execute it in simulated environments. They will not just understand LCCA formulas; they will build and defend cost models for tangible scenarios. This emphasis on experiential learning ensures that attendees develop a strategic mindset, enabling them to identify and eliminate unnecessary costs, champion innovation, and articulate the long-term financial benefits of their recommendations with confidence and authority. The course is designed to transform participants from project executors into strategic value creators.