Maintenance Cost Optimization in Manufacturing Training Course

Professional Development Training Course Outline

Category	Manufacturing	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Manufacturing Cost Engineering is a critical discipline that integrates cost optimization, industrial engineering, lean manufacturing, and value engineering to maximize profitability while maintaining product quality and operational efficiency. In today's highly competitive global market, organizations are under constant pressure to reduce production costs, improve supply chain efficiency, and enhance cost transparency across the manufacturing lifecycle. Manufacturing Cost Engineering Training Course is designed to equip professionals with advanced tools and methodologies for cost estimation, cost control, cost reduction strategies, and lifecycle cost management using modern engineering and digital manufacturing practices.

The course provides a comprehensive understanding of cost drivers, production economics, material optimization, process efficiency, and advanced cost modeling techniques. Participants will learn how to apply real-world manufacturing analytics, benchmarking, and predictive cost engineering tools to improve decision-making. Through case-based learning and industry-focused modules, this program empowers engineers, managers, and analysts to implement sustainable cost reduction strategies aligned with Industry 4.0 standards and smart manufacturing trends.

Programme Curriculum

Manufacturing Cost Engineering Training Course

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Course Duration

5 days

Course Objectives

1. Master Manufacturing Cost Analysis & Cost Breakdown Structure (CBS)
2. Understand Lean Manufacturing & Waste Reduction Techniques
3. Apply Value Engineering for Cost Optimization
4. Develop expertise in Product Lifecycle Costing (LCC)
5. Implement Industrial Cost Control Systems
6. Learn Standard Costing & Variance Analysis
7. Use Advanced Cost Estimation Models
8. Optimize Supply Chain Cost Efficiency
9. Apply Activity-Based Costing (ABC)
10. Improve Production Cost Benchmarking
11. Enhance Operational Efficiency & Process Optimization
12. Integrate Digital Manufacturing & Smart Factory Costing
13. Build skills in Profitability Engineering & Cost Strategy Development

Target Audience

1. Manufacturing Engineers
2. Industrial Engineers
3. Cost Engineers & Analysts
4. Production Managers
5. Supply Chain Professionals
6. Operations Managers
7. Quality & Process Improvement Specialists
8. Engineering Graduates & Technical Consultants

Course Modules

Module 1: Fundamentals of Manufacturing Cost Engineering

- Overview of cost engineering principles
- Types of manufacturing costs (fixed, variable, semi-variable)
- Cost classification and structure mapping
- Introduction to cost drivers in production systems
- Cost behavior analysis in manufacturing

- **Case Study:** Automotive component manufacturer reducing overhead cost by 18% through cost classification restructuring.

Module 2: Cost Estimation Techniques & Modeling

- Parametric and analogical cost estimation
- Bottom-up vs top-down cost modeling
- Engineering cost estimation tools
- Early-stage product cost forecasting
- Accuracy improvement techniques
- **Case Study:** Aerospace parts manufacturer improving bid accuracy using parametric estimation models.

Module 3: Lean Manufacturing & Waste Reduction

- Lean principles in cost engineering
- 7 wastes in manufacturing (TIMWOOD)
- Value stream mapping (VSM)
- Kaizen cost reduction approach
- Continuous improvement systems
- **Case Study:** Electronics assembly plant reducing production waste by 25% using Lean Kaizen implementation.

Module 4: Value Engineering & Cost Optimization

- Value analysis methodology
- Function-cost relationship analysis
- Alternative material selection strategies
- Design-to-cost approach
- Cost-performance trade-offs
- **Case Study:** Consumer appliance manufacturer reducing BOM cost by 15% through value engineering redesign.

Module 5: Activity-Based Costing (ABC) & Cost Allocation

- ABC principles and frameworks
- Cost pool identification
- Resource consumption modeling
- Cost allocation accuracy improvement
- Profitability analysis per product line
- **Case Study:** Chemical processing company improving product profitability visibility using ABC system.

Module 6: Supply Chain Cost Engineering

- End-to-end supply chain cost analysis
- Procurement cost optimization
- Logistics and transportation cost control
- Vendor cost benchmarking
- Inventory cost reduction strategies
- **Case Study:** FMCG company reducing logistics cost by 20% through optimized supplier network design.

Module 7: Digital Manufacturing & Smart Costing

- Industry 4.0 impact on cost engineering
- IoT-based cost monitoring systems
- Digital twins for cost simulation
- Predictive analytics in cost forecasting
- Automation and robotics cost impact
- **Case Study:** Smart factory reducing downtime cost by 30% using predictive maintenance analytics.

Module 8: Lifecycle Costing & Profitability Engineering

- Total Cost of Ownership (TCO)
- Product lifecycle cost analysis
- Maintenance and operational cost modeling
- Sustainability cost integration
- Profitability optimization frameworks
- **Case Study:** Heavy equipment manufacturer extending product lifecycle profitability by 22% through lifecycle costing analysis.

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

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Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com