# Production Cost Optimization in Manufacturing Training Course

Professional Development Training Course Outline

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

## Course Introduction

Production Cost Optimization in Manufacturing Training Course is designed to equip professionals with advanced capabilities in cost reduction, lean manufacturing, operational efficiency, and data-driven production management. In today's highly competitive global market, manufacturers are under pressure to improve profit margins, reduce waste, optimize supply chains, and enhance productivity while maintaining quality standards. This course delivers actionable insights into modern manufacturing excellence, integrating Industry 4.0 technologies, predictive analytics, automation, and lean six sigma principles to transform cost structures across production environments.

The training focuses on enabling organizations to achieve sustainable cost leadership, smart factory transformation, real-time production monitoring, and value stream optimization. Participants will learn how to identify cost leakages, implement process optimization strategies, reduce downtime, improve resource utilization, and leverage digital manufacturing tools. By combining theoretical foundations with real-world applications, this course empowers professionals to drive measurable financial impact and operational excellence in manufacturing ecosystems.

## Programme Curriculum

**Production Cost Optimization in Manufacturing Training Course**

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**Course Duration**

5 days

**Course Objectives**

1. Master Lean Manufacturing Cost Reduction Techniques
2. Implement Six Sigma Process Optimization Strategies
3. Analyze Production Waste Elimination (Muda, Mura, Muri)
4. Optimize Supply Chain Cost Efficiency Models
5. Apply Real-Time Production Analytics & KPI Dashboards
6. Improve Manufacturing Throughput & Capacity Utilization
7. Deploy Smart Factory & Industry 4.0 Solutions
8. Reduce Machine Downtime Using Predictive Maintenance
9. Enhance Energy Efficiency in Manufacturing Operations
10. Apply Value Stream Mapping for Cost Control
11. Integrate ERP & IoT for Production Optimization
12. Strengthen Inventory Cost Management Techniques
13. Build Data-Driven Decision-Making in Manufacturing

**Target Audience**

1. Manufacturing Plant Managers
2. Production & Operations Supervisors
3. Industrial Engineers
4. Supply Chain & Logistics Managers
5. Lean Six Sigma Professionals
6. Cost & Financial Analysts in Manufacturing
7. Quality Assurance Managers
8. Operations Improvement Consultants

**Course Modules**

**Module 1: Fundamentals of Production Cost Management**

- Cost classification in manufacturing systems
- Fixed vs variable cost analysis
- Direct vs indirect production costs
- Cost drivers identification techniques
- Introduction to cost optimization frameworks
- **Case Study:** Automotive assembly plant reducing overhead costs by 18% through cost driver analysis

**Module 2: Lean Manufacturing & Waste Reduction**

- Toyota Production System principles
- 7 types of manufacturing waste (TIMWOOD)
- Continuous improvement (Kaizen) systems
- Lean workflow design
- Standardized work processes
- **Case Study:** Electronics manufacturer eliminating 25% process waste using Lean Kaizen system

**Module 3: Six Sigma for Cost Efficiency**

- DMAIC methodology application
- Process variation reduction
- Defect cost impact analysis
- Statistical process control (SPC)
- Root cause analysis tools
- **Case Study:** Packaging company reducing defect-related costs by 32% using Six Sigma DMAIC

**Module 4: Smart Manufacturing & Industry 4.0**

- IoT-enabled production systems
- Digital twin technology
- AI-driven production forecasting
- Automation in manufacturing lines
- Smart sensors for efficiency tracking
- **Case Study:** Smart factory reducing operational cost by 28% through IoT integration

**Module 5: Energy & Resource Optimization**

- Energy consumption analysis in plants
- Sustainable manufacturing practices
- Resource utilization efficiency
- Carbon footprint reduction strategies
- Renewable energy integration
- **Case Study:** Cement industry plant saving 22% energy cost via optimization system

**Module 6: Inventory & Supply Chain Cost Control**

- Just-in-Time (JIT) inventory system
- Demand forecasting techniques
- Warehouse optimization strategies
- Supplier cost negotiation models
- Logistics cost reduction methods
- **Case Study:** FMCG company reducing inventory holding cost by 30%

**Module 7: Predictive Maintenance & Downtime Reduction**

- Condition-based monitoring systems
- Predictive analytics in maintenance
- Equipment lifecycle optimization
- Failure prediction modeling
- Maintenance scheduling optimization

- **Case Study:** Steel manufacturing plant reducing downtime by 40% using predictive maintenance

**Module 8: Data Analytics for Cost Optimization**

- Manufacturing KPIs and dashboards
- Big data in production analysis
- Real-time performance tracking
- Decision support systems
- AI-based cost optimization models
- **Case Study:** Textile manufacturer improving profitability by 20% using analytics dashboards

### 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:

**Register Online Now**

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