Advanced Total Productive Maintenance in Manufacturing Training Course

Professional Development Training Course Outline

Category	Manufacturing	**Duration**	10 Days
Base Fee	$3,000 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Advanced Total Productive Maintenance (TPM) is a world-class manufacturing excellence strategy focused on maximizing equipment effectiveness, operational reliability, and zero breakdown production systems. Advanced Total Productive Maintenance in Manufacturing Training Course is designed to equip manufacturing professionals with cutting-edge TPM methodologies that integrate lean manufacturing, predictive maintenance, smart factory technologies, and continuous improvement culture to achieve world-class productivity and reduced downtime.

In today's competitive Industry 4.0 environment, TPM plays a critical role in enhancing Overall Equipment Effectiveness (OEE), reducing chronic losses, improving asset lifecycle management, and driving autonomous maintenance systems. This advanced course provides practical insights, case-based learning, and hands-on frameworks to implement sustainable TPM systems across manufacturing plants for operational excellence and cost optimization.

Programme Curriculum

Advanced Total Productive Maintenance in Manufacturing Training Course

Introduction

Advanced Total Productive Maintenance (TPM) is a world-class manufacturing excellence strategy focused on maximizing equipment effectiveness, operational reliability, and zero breakdown production systems. Advanced Total Productive Maintenance in Manufacturing Training Course is designed to equip manufacturing professionals with cutting-edge TPM methodologies that integrate lean manufacturing, predictive maintenance, smart factory technologies, and continuous improvement culture to achieve world-class productivity and reduced downtime.

In today’s competitive Industry 4.0 environment, TPM plays a critical role in enhancing Overall Equipment Effectiveness (OEE), reducing chronic losses, improving asset lifecycle management, and driving autonomous maintenance systems. This advanced course provides practical insights, case-based learning, and hands-on frameworks to implement sustainable TPM systems across manufacturing plants for operational excellence and cost optimization.

Course Duration

10 days

Course Objectives

1. Master Total Productive Maintenance (TPM) implementation strategy for manufacturing excellence
2. Improve Overall Equipment Effectiveness (OEE) using real-time analytics
3. Develop autonomous maintenance culture among operators
4. Implement predictive and preventive maintenance systems
5. Reduce equipment downtime and production losses
6. Apply lean manufacturing and Six Sigma integration with TPM
7. Strengthen root cause analysis (RCA) for chronic failures
8. Build smart maintenance scheduling systems using Industry 4.0 tools
9. Optimize asset lifecycle and maintenance cost reduction strategies
10. Enhance production reliability and machine uptime performance
11. Develop digital TPM dashboards and KPI tracking systems
12. Foster continuous improvement (Kaizen) culture in maintenance teams
13. Implement zero-defect, zero-breakdown manufacturing environment

Target Audience

- Manufacturing Plant Managers
- Maintenance Engineers & Supervisors
- Production Managers & Line Leaders
- Industrial Engineers
- Reliability Engineers
- Quality Assurance Professionals
- Operations Excellence Teams
- Supply Chain & Asset Management Professionals

Course Modules

Module 1: Introduction to TPM & Manufacturing Excellence

- Fundamentals of TPM philosophy and pillars
- Evolution from reactive to proactive maintenance
- Role of TPM in Industry 4.0 manufacturing
- Benefits of zero breakdown production systems
- TPM vs traditional maintenance comparison
- **Case Study:** Toyota Production System TPM success model

Module 2: Overall Equipment Effectiveness (OEE) Mastery

- Understanding availability, performance, quality
- OEE calculation and benchmarking techniques

- Loss classification in manufacturing systems
- Digital OEE tracking dashboards
- Real-time performance monitoring tools
- **Case Study:** Automotive assembly plant OEE improvement

Module 3: Autonomous Maintenance (Jishu Hozen)

- Operator-led maintenance practices
- Cleaning, inspection, lubrication standards
- Early defect detection techniques
- Skill development for machine operators
- Workplace ownership culture building
- **Case Study:** FMCG plant autonomous maintenance success

Module 4: Planned Preventive Maintenance Systems

- Maintenance scheduling strategies
- Time-based vs condition-based maintenance
- Spare parts planning optimization
- Maintenance workflow automation
- Reducing unplanned downtime
- **Case Study:** Food processing industry maintenance optimization

Module 5: Predictive Maintenance & IoT Integration

- Sensor-based condition monitoring
- AI and machine learning in maintenance
- Vibration and thermal analysis systems
- Predictive failure detection models
- Smart factory integration
- **Case Study:** Smart factory predictive maintenance system

Module 6: Root Cause Analysis (RCA) & Failure Elimination

- 5 Why analysis and Fishbone diagram
- Failure mode effect analysis (FMEA)
- Chronic problem elimination strategies
- Data-driven decision making
- Corrective action planning
- **Case Study:** Heavy machinery breakdown elimination project

Module 7: Kaizen & Continuous Improvement in TPM

- Kaizen philosophy in maintenance
- Small group improvement activities
- Waste elimination in maintenance processes
- Employee engagement systems
- Continuous feedback loops
- **Case Study:** Electronics manufacturing Kaizen TPM project

Module 8: Lean Manufacturing Integration with TPM

- Lean principles in maintenance systems
- Waste reduction in equipment utilization
- Value stream mapping for maintenance
- Just-in-time maintenance planning
- Process flow optimization
- **Case Study:** Lean-TPM integrated automotive plant

Module 9: Maintenance Planning & Scheduling Optimization

- Work order management systems
- Maintenance backlog reduction techniques
- Resource allocation strategies
- Digital scheduling tools
- Priority-based maintenance execution
- **Case Study:** Chemical plant scheduling optimization

Module 10: Spare Parts & Inventory Management

- Critical spare parts identification
- Inventory optimization models
- Just-in-case vs just-in-time spares
- Supplier integration strategies
- Cost control in spare management
- **Case Study:** Manufacturing spare parts cost reduction

Module 11: Equipment Reliability Engineering

- Reliability-centered maintenance (RCM)
- Failure probability analysis
- Mean time between failure (MTBF) improvement
- Asset reliability modeling
- Lifecycle management strategies
- **Case Study:** Power plant reliability enhancement

Module 12: Digital TPM & Smart Manufacturing

- CMMS (Computerized Maintenance Management Systems)
- Digital dashboards and KPI visualization
- Industry 4.0 integration in TPM
- Cloud-based maintenance tracking
- AI-powered maintenance forecasting
- **Case Study:** Smart factory digital TPM transformation

Module 13: Safety, Health & Environment in TPM

- Safety-integrated maintenance systems
- Risk assessment techniques
- Environmental compliance in operations
- Machine safety protocols
- Zero-incident workplace strategy
- **Case Study:** Pharmaceutical plant safety TPM implementation

Module 14: TPM KPI Tracking & Performance Measurement

- Key TPM performance indicators
- Downtime tracking and analysis
- Productivity benchmarking systems
- Real-time reporting dashboards
- Continuous KPI improvement cycles
- **Case Study:** Textile industry KPI transformation

Module 15: TPM Implementation Strategy & Roadmap

- Step-by-step TPM deployment plan
- Change management strategies
- Employee engagement frameworks
- Pilot project execution
- Scaling TPM across organization
- **Case Study:** Full-scale TPM rollout in manufacturing plant

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	04 Dec 2026	Online	$2,000
23 Nov 2026	04 Dec 2026	Physical	$3,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$9,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

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

Register Online Now

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