Asset Lifecycle Management (ALM) 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

Asset Lifecycle Management (ALM) in Manufacturing is a strategic, data-driven approach to managing industrial assets from planning, procurement, commissioning, operation, maintenance, optimization, and retirement. In the era of Industry 4.0, Smart Manufacturing, Industrial IoT (IIoT), Digital Twin technology, and AI-driven predictive maintenance, organizations are shifting from reactive maintenance models to fully integrated, end-to-end asset lifecycle optimization systems. Asset Lifecycle Management (ALM) in Manufacturing Training Course equips professionals with advanced competencies in asset performance management, reliability engineering, EAM (Enterprise Asset Management), and digital transformation frameworks to maximize ROI and operational efficiency.

With increasing global competition and rising operational costs, manufacturers are leveraging SAP EAM, IBM Maximo, CMMS systems, predictive analytics, and condition-based monitoring to enhance asset reliability and reduce downtime. This course is designed to bridge the gap between traditional maintenance practices and modern digital asset management strategies, empowering professionals to drive sustainable manufacturing, asset optimization, cost reduction, and lifecycle intelligence across industrial environments.

Programme Curriculum

Asset Lifecycle Management (ALM) in Manufacturing Training Course

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Course Duration

10 days

Course Objectives

1. Master Asset Lifecycle Management (ALM) frameworks in manufacturing systems
2. Understand Industry 4.0 integration with asset management strategies
3. Implement Predictive Maintenance and Condition-Based Monitoring (CBM)
4. Optimize Total Cost of Ownership (TCO) and Asset ROI
5. Apply Digital Twin technology for asset performance simulation
6. Gain expertise in Enterprise Asset Management (EAM) systems like SAP & IBM Maximo
7. Improve Equipment Reliability and Operational Efficiency (OEE)
8. Design Preventive Maintenance and Maintenance Scheduling strategies
9. Utilize Industrial IoT (IIoT) for real-time asset tracking
10. Implement Risk-Based Maintenance (RBM) frameworks
11. Enhance Spare Parts Inventory Optimization and Supply Chain integration
12. Drive Sustainability and Green Asset Management practices
13. Develop Data-Driven Decision Making using AI & Machine Learning in maintenance

Target Audience

- Maintenance Engineers & Technicians
- Plant & Operations Managers
- Reliability Engineers
- Asset Managers & Facility Managers
- Manufacturing Executives & Directors
- Industrial Engineers
- ERP / EAM System Consultants
- Supply Chain & Production Planning Professionals

Course Modules

Module 1: Fundamentals of Asset Lifecycle Management

- Asset lifecycle stages in manufacturing
- Core ALM principles and frameworks
- Importance of lifecycle cost analysis
- Asset classification and hierarchy
- KPI definition for asset performance
- **Case Study:** Manufacturing plant lifecycle inefficiencies

Module 2: Industry 4.0 & Smart Manufacturing Integration

- Digital transformation in manufacturing
- IoT-enabled asset monitoring
- Cyber-physical systems overview
- Smart factory architecture
- Data integration across systems
- **Case Study:** Smart automotive manufacturing plant

Module 3: Enterprise Asset Management (EAM Systems)

- SAP EAM and IBM Maximo overview
- Asset registry and configuration
- Maintenance workflow automation
- Work order lifecycle management
- System integration techniques
- **Case Study:** ERP-based asset optimization in FMCG plant

Module 4: Predictive Maintenance & AI Analytics

- Predictive vs preventive maintenance
- Machine learning in failure prediction
- Sensor data utilization
- Anomaly detection systems
- Maintenance forecasting models
- **Case Study:** Predictive maintenance in power plant

Module 5: Condition-Based Monitoring (CBM)

- Real-time monitoring systems
- Vibration and thermal analysis
- Sensor deployment strategies
- Threshold-based alerts
- Failure pattern recognition
- **Case Study:** Heavy machinery breakdown prevention

Module 6: Digital Twin Technology

- Digital asset replication models
- Simulation of asset behavior
- Real-time performance tracking
- Scenario analysis and optimization
- Integration with IoT systems
- **Case Study:** Digital twin in aerospace manufacturing

Module 7: Reliability Centered Maintenance (RCM)

- RCM methodology and principles
- Failure Mode Effects Analysis (FMEA)
- Criticality assessment
- Maintenance task optimization
- Risk prioritization

- **Case Study:** Oil refinery reliability improvement

Module 8: Total Productive Maintenance (TPM)

- Autonomous maintenance concepts
- Operator involvement strategies
- Equipment efficiency improvement
- Loss elimination techniques
- TPM pillar implementation
- **Case Study:** Automotive assembly line TPM success

Module 9: Asset Performance Management (APM)

- KPI-driven performance tracking
- Asset health scoring models
- Root cause analysis techniques
- Performance dashboards
- Optimization strategies
- **Case Study:** Pharmaceutical plant APM system

Module 10: Maintenance Planning & Scheduling

- Job planning methodologies
- Shutdown and turnaround planning
- Resource allocation optimization
- Scheduling software usage
- Work prioritization systems
- **Case Study:** Cement industry shutdown planning

Module 11: Spare Parts & Inventory Optimization

- Critical spare identification
- Inventory forecasting models
- Just-in-time (JIT) strategies
- Warehouse optimization
- Cost reduction techniques
- **Case Study:** Electronics manufacturing inventory control

Module 12: Risk-Based Maintenance (RBM)

- Risk assessment frameworks
- Asset failure probability modeling
- Impact analysis techniques
- Compliance and safety integration
- Risk mitigation planning
- **Case Study:** Chemical plant risk reduction strategy

Module 13: Sustainability in Asset Management

- Green manufacturing principles
- Energy-efficient asset usage
- Carbon footprint reduction

- Circular economy integration
- Sustainable maintenance practices
- **Case Study:** Eco-friendly steel production plant

Module 14: Data Analytics & Industrial AI

- Big data in manufacturing
- Machine learning models
- Predictive dashboards
- Data visualization tools
- Decision intelligence systems
- **Case Study:** AI-driven maintenance optimization

Module 15: Asset Decommissioning & Disposal

- Asset retirement planning
- Regulatory compliance requirements
- Salvage value optimization
- Safe disposal practices
- Lifecycle closure documentation
- **Case Study:** Industrial plant decommissioning project

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

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