Smart Warehousing Systems 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

Smart Warehousing Systems in Manufacturing represent a transformative shift in modern industrial operations, integrating IoT (Internet of Things), AI-driven automation, robotics, cloud computing, RFID tracking, and real-time data analytics to optimize inventory control, logistics efficiency, and supply chain performance. In today's highly competitive manufacturing landscape, organizations are rapidly adopting Industry 4.0 smart warehouse solutions to reduce operational costs, minimize human error, and enhance production agility. Smart Warehousing Systems in Manufacturing Training Course equips participants with advanced knowledge of automated storage and retrieval systems (ASRS), digital twin technology, predictive analytics, warehouse execution systems (WES), and autonomous mobile robots (AMRs) that are reshaping global manufacturing ecosystems.

The demand for intelligent warehousing is accelerating due to the rise of e-commerce manufacturing integration, lean supply chain strategies, and AI-powered demand forecasting systems. Smart warehouses are no longer optional but essential for achieving real-time visibility, end-to-end traceability, and zero-inventory wastage goals. This course provides a comprehensive understanding of how manufacturers can implement smart logistics orchestration, cloud-based warehouse management systems (WMS), blockchain-enabled inventory tracking, and machine learning-driven optimization models. Participants will gain hands-on insights into designing scalable, resilient, and future-ready smart warehouse infrastructures aligned with global manufacturing standards.

Programme Curriculum

Smart Warehousing Systems in Manufacturing Training Course

Introduction

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Course Duration

10 days

Course Objectives

1. Understand Industry 4.0 smart warehousing architecture
2. Implement AI-powered warehouse management systems (WMS)
3. Apply IoT-enabled real-time inventory tracking
4. Design automated storage and retrieval systems (ASRS)
5. Optimize workflows using robotic process automation (RPA)
6. Integrate digital twin technology in warehousing
7. Use predictive analytics for demand forecasting
8. Improve efficiency through autonomous mobile robots (AMRs)
9. Enhance traceability with RFID and blockchain logistics
10. Develop cloud-based warehouse control systems
11. Reduce costs using lean smart manufacturing principles
12. Strengthen supply chains with real-time data analytics dashboards
13. Build scalable AI-driven logistics optimization models

Target Audience

1. Manufacturing Engineers
2. Supply Chain Managers
3. Logistics and Warehouse Supervisors
4. Operations Managers
5. Industrial Automation Specialists
6. ERP/WMS Software Professionals
7. Production Planning Analysts
8. Smart Factory Transformation Consultants

Course Modules

Module 1: Introduction to Smart Warehousing

- Evolution of warehousing systems
- Industry 4.0 transformation overview
- Smart warehouse vs traditional warehouse
- Key technologies overview
- Global manufacturing trends
- **Case Study:** Amazon Fulfillment Smart Warehouses

Module 2: Warehouse Management Systems (WMS)

- Core WMS functionalities
- Cloud-based WMS platforms
- Integration with ERP systems
- Real-time inventory updates
- Automation capabilities
- **Case Study:** SAP Extended Warehouse Management (EWM)

Module 3: IoT in Smart Warehousing

- IoT sensor networks in logistics
- Real-time tracking systems
- Smart shelves and smart bins
- Environmental monitoring systems
- Data synchronization models
- **Case Study:** DHL IoT Smart Logistics Network

Module 4: Artificial Intelligence in Warehousing

- AI-driven forecasting systems
- Intelligent decision-making models
- Demand prediction algorithms
- Smart replenishment systems
- AI-based route optimization
- **Case Study:** Alibaba AI Warehouse Operations

Module 5: Robotics & Automation Systems

- Autonomous mobile robots (AMRs)
- Automated guided vehicles (AGVs)
- Robotic picking systems
- Conveyor automation systems
- Warehouse robotics integration
- **Case Study:** Ocado Smart Robotics Warehouse

Module 6: RFID & Barcode Technologies

- RFID tracking systems
- Barcode automation processes
- Asset tracking solutions
- Inventory accuracy improvement
- Data capture technologies

- **Case Study:** Walmart RFID Inventory System

Module 7: Cloud-Based Warehousing

- Cloud architecture models
- SaaS warehouse platforms
- Data accessibility and scalability
- Cybersecurity in cloud logistics
- Integration with enterprise systems
- **Case Study:** Microsoft Azure Supply Chain Solutions

Module 8: Digital Twin Technology

- Virtual warehouse modeling
- Simulation of operations
- Predictive maintenance systems
- Process optimization models
- Real-time synchronization
- **Case Study:** Siemens Digital Twin Factory Model

Module 9: Supply Chain Integration

- End-to-end supply chain visibility
- Supplier coordination systems
- Demand-supply alignment
- Logistics network optimization
- Integrated data platforms
- **Case Study:** Toyota Lean Supply Chain System

Module 10: Predictive Analytics

- Machine learning forecasting
- Inventory optimization models
- Demand variability analysis
- Risk prediction systems
- Data-driven decision tools
- **Case Study:** UPS Predictive Logistics System

Module 11: Warehouse Security Systems

- Cybersecurity frameworks
- Physical access control systems
- Surveillance technologies
- Data protection protocols
- Risk mitigation strategies
- **Case Study:** FedEx Secure Logistics Network

Module 12: Energy Efficient Warehousing

- Green warehouse design
- Energy monitoring systems
- Sustainable logistics practices

- Carbon footprint reduction
- Smart lighting and HVAC systems
- **Case Study:** IKEA Sustainable Warehousing

Module 13: Lean Warehousing Principles

- Waste reduction techniques
- Process flow optimization
- 5S warehouse methodology
- Continuous improvement systems
- Efficiency benchmarking
- **Case Study:** Toyota Lean Warehouse Model

Module 14: Warehouse Performance Metrics

- KPI tracking systems
- Efficiency measurement tools
- Productivity analysis
- Cost optimization metrics
- Operational dashboards
- **Case Study:** Amazon Performance Analytics System

Module 15: Future of Smart Warehousing

- Hyper-automation trends
- AI-driven autonomous warehouses
- Blockchain logistics evolution
- 6G-enabled supply chains
- Fully unmanned warehouse systems
- **Case Study:** Tesla Gigafactory Smart Logistics Vision

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:

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