Advanced Warehouse Automation 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

The Advanced Warehouse Automation in Manufacturing Training Course is designed to equip professionals with the skills and expertise required to transform traditional warehousing systems into fully automated, intelligent, and data-driven ecosystems. With the rapid adoption of Industry 4.0, Smart Manufacturing, AI-powered logistics, IoT-enabled warehouses, robotics automation, and digital supply chain transformation, modern manufacturing facilities demand highly optimized, efficient, and scalable warehouse operations.

This training course provides an in-depth understanding of next-generation warehouse technologies such as Automated Storage and Retrieval Systems (AS/RS), Autonomous Mobile Robots (AMRs), Warehouse Management Systems (WMS), Digital Twin Simulation, RFID tracking, machine learning-based forecasting, and cloud-integrated logistics platforms. Participants will learn how to design, implement, and manage fully automated warehouse environments that significantly reduce operational costs, improve inventory accuracy, enhance productivity, and enable real-time decision-making.

Programme Curriculum

Advanced Warehouse Automation in Manufacturing Training Course

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Course Objectives

1. Master Industry 4.0 Smart Warehouse Automation
2. Implement AI-powered Inventory Optimization Systems
3. Design IoT-enabled Real-Time Tracking Warehouses
4. Deploy Autonomous Mobile Robots (AMRs) in Logistics
5. Integrate Warehouse Management Systems (WMS) with ERP
6. Develop Digital Twin Simulation for Warehouse Operations
7. Apply Predictive Analytics in Supply Chain Forecasting
8. Optimize RFID and Barcode Automation Systems
9. Improve Lean Manufacturing and Warehouse Efficiency
10. Enable Cloud-based Logistics and Data Integration
11. Enhance Robotic Process Automation (RPA) in Warehousing
12. Strengthen Smart Material Handling Systems
13. Achieve Zero-Error Inventory and Fulfillment Accuracy

Target Audience

1. Supply Chain Managers
2. Warehouse Operations Supervisors
3. Manufacturing Engineers
4. Logistics Coordinators
5. Industrial Automation Engineers
6. ERP/WMS System Administrators
7. Operations and Process Improvement Consultants
8. Manufacturing Plant Directors & Executives

Course Modules

Module 1: Introduction to Smart Warehouse Ecosystems

- Evolution of warehouse automation
- Industry 4.0 transformation trends
- Core automation technologies overview
- Role of AI and IoT in logistics
- Smart warehouse architecture
- **Case Study:** Amazon fulfillment center automation model

Module 2: Warehouse Management Systems (WMS)

- WMS architecture and functionality

- Real-time inventory control
- ERP integration strategies
- Data synchronization methods
- Cloud-based WMS platforms
- **Case Study:** SAP EWM implementation in manufacturing plant

Module 3: Automated Storage and Retrieval Systems (AS/RS)

- Types of AS/RS systems
- High-density storage optimization
- Crane-based automation systems
- System selection criteria
- Maintenance strategies
- **Case Study:** Automotive spare parts AS/RS deployment

Module 4: Robotics in Warehouse Operations

- Types of warehouse robots
- AMRs vs AGVs comparison
- Robot fleet management
- Navigation technologies (SLAM)
- Safety protocols
- **Case Study:** Alibaba smart warehouse robotics system

Module 5: Internet of Things (IoT) in Warehousing

- Sensor integration systems
- Real-time monitoring dashboards
- Smart shelving systems
- Environmental tracking solutions
- IoT security frameworks
- **Case Study:** Cold chain pharmaceutical warehouse IoT system

Module 6: Artificial Intelligence in Inventory Management

- AI demand forecasting models
- Stock optimization algorithms
- Machine learning inventory control
- Automated replenishment systems
- Data-driven decision-making
- **Case Study:** Walmart AI inventory optimization

Module 7: Digital Twin Technology

- Concept of digital twin in logistics
- Simulation of warehouse operations
- Performance modeling tools
- Predictive maintenance integration
- Virtual testing environments
- **Case Study:** Siemens digital warehouse twin system

Module 8: RFID and Barcode Automation

- RFID tagging systems
- Barcode scanning technologies
- Real-time tracking solutions
- Asset visibility systems
- Error reduction techniques
- **Case Study:** DHL RFID warehouse transformation

Module 9: Material Handling Automation

- Conveyor systems design
- Sortation systems
- Automated lifting equipment
- Loading/unloading automation
- Safety enhancements
- **Case Study:** FedEx automated parcel sorting center

Module 10: Cloud-Based Warehouse Integration

- Cloud ERP systems
- Data centralization methods
- API integration frameworks
- Cybersecurity in cloud logistics
- Remote monitoring systems
- **Case Study:** Microsoft Azure warehouse integration solution

Module 11: Predictive Maintenance in Warehousing

- Sensor-based monitoring systems
- Failure prediction algorithms
- Maintenance scheduling optimization
- AI-driven alerts
- Equipment lifecycle management
- **Case Study:** Toyota predictive warehouse maintenance system

Module 12: Lean Warehousing & Process Optimization

- Lean principles in logistics
- Waste elimination strategies
- Process mapping techniques
- Kaizen implementation
- Continuous improvement systems
- **Case Study:** Toyota Production System warehouse model

Module 13: Supply Chain Visibility Systems

- End-to-end tracking systems
- Blockchain in logistics
- Real-time analytics dashboards
- Supplier integration systems
- Transparency frameworks
- **Case Study:** Maersk blockchain supply chain platform

Module 14: Warehouse Safety and Compliance Automation

- Automated safety monitoring
- OSHA compliance systems
- Hazard detection sensors
- Emergency response automation
- Risk mitigation strategies
- **Case Study:** BMW automated safety compliance warehouse

Module 15: Future Trends in Warehouse Automation

- Hyper-automation in logistics
- 5G-enabled smart warehouses
- Edge computing applications
- Sustainable green warehousing
- Autonomous supply chain networks
- **Case Study:** Tesla Gigafactory automated logistics system

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