Smart Inventory Systems in Manufacturing Training Course

Professional Development Training Course Outline

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

Course Introduction

Smart Inventory Systems in Manufacturing represent a transformative shift in how modern production environments manage materials, reduce waste, and optimize supply chains using AI-driven analytics, IoT-enabled tracking, RFID technology, and real-time data integration. Smart Inventory Systems in Manufacturing Training Course is designed to equip professionals with the skills to implement and manage intelligent inventory ecosystems that improve operational efficiency, reduce downtime, and enhance predictive decision-making across manufacturing units.

With the rise of Industry 4.0, digital supply chains, cloud-based ERP systems, and automation in warehouse management, manufacturers are increasingly relying on smart inventory solutions to stay competitive. This course provides a comprehensive understanding of how emerging technologies like machine learning forecasting, digital twins, blockchain traceability, and automated replenishment systems are revolutionizing inventory control and manufacturing logistics.

Programme Curriculum

Smart Inventory Systems in Manufacturing Training Course

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Course Duration

5 days

Course Objectives

1. Master Smart Inventory Management Systems (SIMS) in modern manufacturing environments
2. Understand Industry 4.0-enabled supply chain optimization techniques
3. Implement IoT-based real-time inventory tracking systems
4. Apply AI-powered demand forecasting models for production planning
5. Optimize warehouse operations using automation and robotics integration
6. Learn RFID and barcode-driven asset tracking systems
7. Improve accuracy with cloud-based ERP inventory synchronization
8. Reduce operational costs through lean inventory strategies and waste reduction
9. Utilize predictive analytics for stock replenishment planning
10. Integrate digital twin technology for inventory simulation
11. Enhance traceability using blockchain supply chain solutions
12. Develop dashboards using real-time data visualization tools (BI tools)
13. Build resilient supply chains using smart logistics and agile inventory systems

Target Audience

1. Manufacturing Operations Managers
2. Supply Chain and Logistics Professionals
3. Inventory and Warehouse Supervisors
4. Industrial Engineers
5. ERP System Administrators
6. Procurement and Purchasing Managers
7. Data Analysts in Manufacturing
8. Automation and IoT Solution Architects

Course Modules

Module 1: Introduction to Smart Inventory Systems

- Evolution from traditional to smart inventory systems
- Key technologies: AI, IoT, RFID, Cloud ERP
- Role of Industry 4.0 in inventory transformation
- Benefits of digital inventory ecosystems
- Case Study: Toyota’s smart manufacturing inventory optimization

Module 2: IoT in Inventory Tracking

- IoT sensors for real-time stock monitoring
- Smart shelves and connected warehouses
- Data transmission and cloud integration

- Asset visibility improvement techniques
- Case Study: Amazon’s IoT-enabled fulfillment centers

Module 3: AI & Predictive Inventory Analytics

- Machine learning in demand forecasting
- Predictive replenishment models
- Reducing stockouts and overstock issues
- AI-based inventory optimization algorithms
- Case Study: Walmart predictive inventory system

Module 4: RFID and Barcode Systems

- RFID vs barcode technologies
- Automated identification and tracking
- Implementation in large-scale manufacturing
- Error reduction and accuracy improvement
- Case Study: Zara RFID-driven supply chain

Module 5: ERP & Cloud Inventory Integration

- Cloud-based ERP architecture
- Real-time synchronization of inventory data
- Multi-location inventory management
- System integration challenges and solutions
- Case Study: SAP ERP deployment in global manufacturing

Module 6: Warehouse Automation & Robotics

- Automated storage and retrieval systems (AS/RS)
- Robotics in picking and packing
- Smart conveyor systems
- Warehouse efficiency optimization
- Case Study: Tesla Gigafactory automation systems

Module 7: Digital Twin & Simulation Systems

- Concept of digital twins in inventory systems
- Simulation of supply chain scenarios
- Risk mitigation through virtual modeling
- Real-time performance tracking
- Case Study: Siemens digital twin manufacturing model

Module 8: Blockchain & Supply Chain Traceability

- Blockchain for transparent inventory tracking
- Secure data sharing across supply chains
- Fraud prevention and audit trails
- Smart contracts in procurement
- Case Study: IBM Food Trust blockchain 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	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

Start Date	End Date	Location	Price
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:

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