Digital Manufacturing Platforms 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

Digital Manufacturing Platforms Training Course is designed to equip professionals with cutting-edge skills in Industry 4.0, smart manufacturing, Industrial IoT (IIoT), and digital transformation technologies. As global industries shift toward intelligent factories, AI-driven production systems, and connected manufacturing ecosystems, this course provides a comprehensive foundation in deploying, managing, and optimizing modern digital manufacturing platforms. Participants will gain hands-on expertise in MES (Manufacturing Execution Systems), Digital Twin technology, cloud manufacturing, predictive analytics, and automation integration, enabling them to drive operational efficiency and innovation.

In today’s competitive landscape, organizations are increasingly adopting smart factories, cyber-physical systems, real-time data analytics, and AI-powered manufacturing platforms to reduce downtime, improve productivity, and enhance product quality. This training bridges the gap between traditional manufacturing and next-generation digital ecosystems by focusing on smart production systems, ERP-MES integration, IIoT architectures, and advanced manufacturing intelligence. It prepares learners to become leaders in digital transformation, smart factory deployment, and industrial automation strategy.

Programme Curriculum

Digital Manufacturing Platforms Training Course

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Course Duration

5 days

Course Objectives

1. Master Industry 4.0 smart manufacturing ecosystems
2. Understand Industrial IoT (IIoT) architecture and deployment
3. Implement Manufacturing Execution Systems (MES)
4. Develop skills in Digital Twin technology and simulation modeling
5. Analyze real-time production data and predictive analytics
6. Integrate ERP and MES systems for end-to-end visibility
7. Design cloud-based manufacturing platforms
8. Optimize smart factory automation workflows
9. Apply AI and machine learning in manufacturing operations
10. Enhance supply chain digital integration
11. Improve production efficiency through automation
12. Manage cyber-physical production systems
13. Lead digital transformation initiatives in manufacturing

Target Audience

1. Manufacturing engineers and production managers
2. Industrial automation engineers
3. IT professionals in manufacturing sector
4. Supply chain and operations managers
5. Data analysts in industrial environments
6. IoT and embedded systems engineers
7. ERP/MES system consultants
8. Students and researchers in smart manufacturing

Course Modules

Module 1: Introduction to Industry 4.0 & Smart Manufacturing

- Evolution from Industry 1.0 to 4.0
- Smart factory ecosystem components
- Cyber-physical systems overview
- Role of AI in manufacturing
- Industrial transformation roadmap
- **Case Study:** Siemens Smart Factory transformation in Amberg, Germany

Module 2: Industrial IoT (IIoT) Architecture

- IIoT frameworks and protocols
- Sensor networks and connectivity
- Edge vs cloud computing in manufacturing
- Data acquisition systems
- Security in IIoT environments
- **Case Study:** GE Predix IIoT implementation in aviation manufacturing

Module 3: Manufacturing Execution Systems (MES)

- MES architecture and functions
- Production scheduling and tracking
- Quality management systems integration
- Real-time shop floor control
- MES vs ERP integration
- **Case Study:** Bosch MES deployment in automotive production lines

Module 4: Digital Twin Technology

- Concept of digital twin in manufacturing
- Simulation and virtual modeling
- Real-time synchronization with physical assets
- Predictive maintenance applications
- Product lifecycle optimization
- **Case Study:** Boeing digital twin for aircraft manufacturing optimization

Module 5: Cloud Manufacturing Platforms

- Cloud computing models in manufacturing
- SaaS-based manufacturing systems
- Data storage and scalability
- API integration with enterprise systems
- Cloud security frameworks
- **Case Study:** Tesla cloud-based manufacturing data ecosystem

Module 6: AI & Predictive Analytics in Manufacturing

- Machine learning in production optimization
- Predictive maintenance systems
- Defect detection using computer vision
- Data-driven decision-making
- Industrial AI applications
- **Case Study:** Foxconn AI-driven defect detection system

Module 7: Smart Factory Automation & Robotics

- Industrial robotics integration
- Automated production lines
- PLC and SCADA systems overview
- Human-robot collaboration (HRC)
- Process optimization techniques
- **Case Study:** Amazon robotics fulfillment centers

Module 8: ERP–MES Integration & Digital Transformation

- ERP systems in manufacturing
- End-to-end digital integration
- Data flow between enterprise systems
- KPI tracking and dashboards
- Digital transformation strategy
- **Case Study:** Toyota Production System digital upgrade initiative

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
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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