IoT Integration with ERP for Smart Manufacturing Training Course

Professional Development Training Course Outline

Category	Enterprise Resource Planning (ERP)	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

The Industrial Internet of Things (IIoT) is revolutionizing smart manufacturing by seamlessly integrating connected devices, sensors, and machinery with Enterprise Resource Planning (ERP) systems. This integration empowers manufacturers to achieve real-time visibility, optimize production workflows, enhance predictive maintenance, and make data-driven decisions that improve operational efficiency. The convergence of IoT and ERP fosters digital transformation, enabling companies to scale, automate processes, and maintain competitive advantage in an increasingly connected industrial landscape.

IoT Integration with ERP for Smart Manufacturing Training Course is designed to equip professionals with the knowledge and practical skills to harness the full potential of connected technologies. Participants will explore IoT-driven analytics, cloud-enabled ERP solutions, and cyber-physical systems to create intelligent manufacturing ecosystems. Through hands-on case studies, interactive simulations, and expert-led sessions, attendees will learn to implement IoT strategies that streamline operations, reduce costs, and maximize productivity, preparing them for the next wave of Industry 4.0 innovation.

Programme Curriculum

IoT Integration with ERP for Smart Manufacturing Training Course

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5 days

Course Objectives

1. Understand the fundamentals of IoT and ERP integration in smart manufacturing.
2. Explore Industry 4.0 trends and their impact on digital manufacturing ecosystems.
3. Analyze real-time data analytics for improved decision-making and efficiency.
4. Implement predictive maintenance strategies using IoT-enabled devices.
5. Optimize supply chain management with connected ERP systems.
6. Develop skills to integrate cloud-based ERP solutions with IoT platforms.
7. Examine cybersecurity protocols for safe IoT-ERP integration.
8. Design digital twin simulations for production optimization.
9. Apply AI and machine learning techniques to IoT data for smart manufacturing.
10. Create KPIs and performance dashboards for IoT-enabled ERP systems.
11. Evaluate energy management and sustainability through IoT integration.
12. Study real-world case studies of successful IoT-ERP implementations.
13. Build practical expertise in troubleshooting and scaling IoT-integrated ERP systems.

Target Audience

1. Manufacturing Engineers
2. Production Managers
3. ERP Consultants
4. IoT Solutions Architects
5. Data Analysts in Manufacturing
6. Operations Managers
7. IT Managers in Industrial Sectors
8. Industry 4.0 Enthusiasts

Course Modules

Module 1: Introduction to IoT and ERP in Smart Manufacturing

- Fundamentals of IoT and ERP systems
- Benefits of IoT-ERP integration
- Industry 4.0 overview
- Key IoT devices and sensors in manufacturing
- Case Study: Siemens Smart Factory IoT integration

Module 2: IoT Architecture and Connectivity

- IoT communication protocols
- Sensor and device data acquisition
- Edge vs. cloud computing
- Network and connectivity challenges
- Case Study: Bosch IoT Cloud implementation

Module 3: ERP Systems for Manufacturing

- Overview of ERP modules
- ERP deployment strategies
- Integrating ERP with shop floor operations
- ERP reporting and analytics
- Case Study: SAP S/4HANA IoT integration

Module 4: Data Analytics and Real-time Insights

- Real-time data collection and monitoring
- Predictive analytics for maintenance
- Data visualization dashboards
- Key KPIs for smart manufacturing
- Case Study: GE Predix platform for manufacturing

Module 5: Predictive Maintenance and AI

- IoT-driven predictive maintenance strategies
- Machine learning models for fault detection
- Reducing downtime and increasing uptime
- Integrating AI with ERP systems
- Case Study: Caterpillar predictive maintenance use case

Module 6: Supply Chain Optimization

- IoT-enabled inventory management
- Real-time tracking of goods
- Vendor and logistics integration
- ERP-driven procurement optimization
- Case Study: DHL IoT supply chain solutions

Module 7: Cybersecurity and Risk Management

- IoT security protocols and encryption
- Securing ERP systems
- Risk assessment methodologies
- Compliance with industry standards
- Case Study: Honeywell secure industrial IoT deployment

Module 8: Implementation and Best Practices

- Planning IoT-ERP integration projects
- Change management and workforce readiness
- Performance measurement and optimization
- Scaling IoT solutions in manufacturing

- Case Study: Schneider Electric smart manufacturing success

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

Start Date	End Date	Location	Price
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:

Register Online Now

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com