Edge Computing and ERP in 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

In the era of Industry 4.0, manufacturing organizations are rapidly adopting Edge Computing and Enterprise Resource Planning (ERP) systems to enhance real-time decision-making, data-driven production, and smart factory automation. Edge Computing and ERP in Manufacturing Training Course empowers participants with in-depth insights into edge-enabled digital transformation, IoT integration, predictive maintenance, and AI-driven supply chain optimization. By combining the strengths of edge technology with modern ERP systems, learners will gain hands-on expertise to streamline operations, improve efficiency, and reduce downtime in a competitive manufacturing landscape.

This course bridges the gap between operational technology (OT) and information technology (IT) by providing practical knowledge in edge analytics, cybersecurity, data orchestration, and ERP cloud migration. Through real-world case studies, interactive labs, and expert-led sessions, participants will master how edge-enabled ERP architectures can transform production lines, improve resource utilization, and create smart, resilient, and sustainable manufacturing ecosystems.

Programme Curriculum

Edge Computing and ERP in Manufacturing Training Course

Introduction

In the era of Industry 4.0, manufacturing organizations are rapidly adopting Edge Computing and Enterprise Resource Planning (ERP) systems to enhance real-time decision-making, data-driven production, and smart factory automation. Edge Computing and ERP in Manufacturing Training Course empowers participants with in-depth insights into edge-enabled digital transformation, IoT integration, predictive maintenance, and AI-driven supply chain optimization. By combining the strengths of edge technology with modern ERP systems, learners

will gain hands-on expertise to streamline operations, improve efficiency, and reduce downtime in a competitive manufacturing landscape.

This course bridges the gap between operational technology (OT) and information technology (IT) by providing practical knowledge in edge analytics, cybersecurity, data orchestration, and ERP cloud migration. Through real-world case studies, interactive labs, and expert-led sessions, participants will master how edge-enabled ERP architectures can transform production lines, improve resource utilization, and create smart, resilient, and sustainable manufacturing ecosystems.

Course Duration

5 days

Course Objectives

1. Understand the fundamentals of Edge Computing architecture and its role in smart manufacturing.
2. Integrate IoT devices and sensors with ERP systems for real-time data processing.
3. Analyze AI-powered analytics for predictive maintenance and performance optimization.
4. Explore cloud-edge hybrid models for scalable ERP deployments.
5. Implement cybersecurity best practices in edge-connected manufacturing systems.
6. Optimize supply chain management through edge intelligence and ERP visibility.
7. Leverage digital twins and edge AI for production process simulation.
8. Improve operational efficiency with edge-enabled automation.
9. Design data-driven manufacturing strategies using edge analytics dashboards.
10. Assess the ROI and cost-efficiency of edge-integrated ERP solutions.
11. Develop smart factory frameworks aligning with Industry 4.0 standards.
12. Enhance collaboration and scalability across distributed manufacturing networks.
13. Apply machine learning models at the edge for quality control and defect prediction.

Target Audience

1. Manufacturing Engineers
2. ERP System Administrators
3. IoT Solution Architects
4. Data Analysts & AI Engineers
5. Operations Managers
6. IT Infrastructure Specialists
7. Supply Chain Professionals
8. Industrial Automation Consultants

Course Modules

Module 1: Fundamentals of Edge Computing in Manufacturing

- Overview of Edge Computing Architecture
- Edge vs Cloud and On-Premises Models
- Real-Time Data Processing Techniques
- Integration with Manufacturing Execution Systems (MES)
- Case Study: Siemens Edge Implementation in Automotive Production

Module 2: ERP Systems and Digital Transformation

- ERP Core Functions in Manufacturing
- Cloud ERP and On-Prem ERP
- Data Synchronization Challenges
- Real-Time Decision Support Systems
- Case Study: SAP S/4HANA Deployment in Smart Factory

Module 3: IoT Integration with Edge and ERP

- IoT Device Management and Connectivity
- Data Ingestion and Processing Pipelines
- Protocols
- IoT-ERP Data Synchronization
- Case Study: GE Predix Integration in Energy Manufacturing

Module 4: AI and Predictive Analytics at the Edge

- Machine Learning at the Edge
- Predictive Maintenance Algorithms
- Edge AI Frameworks
- Real-Time Defect Detection
- Case Study: Predictive Maintenance in Aerospace Components

Module 5: Cybersecurity for Edge and ERP Systems

- Edge Device Security Layers
- Data Encryption and Zero-Trust Models
- ERP Access Control Policies
- Secure Data Transmission
- Case Study: Cybersecurity Implementation in Industrial IoT Network

Module 6: Supply Chain Optimization with Edge Intelligence

- Real-Time Tracking and Inventory Management
- Edge-Enabled Demand Forecasting
- Data-Driven Logistics Optimization
- ERP-Integrated Procurement Automation
- Case Study: Edge Analytics for Global Supply Chain Visibility

Module 7: Cloud-Edge Hybrid ERP Architectures

- Hybrid Infrastructure Design
- Edge Node Management and Orchestration
- Cloud Integration and Latency Reduction
- Disaster Recovery and Backup Strategies
- Case Study: Hybrid ERP Implementation in Pharmaceutical Manufacturing

Module 8: Smart Factory Implementation & ROI Analysis

- Building Smart Factory Ecosystems
- Edge Analytics Dashboard Development
- Performance Metrics and KPIs
- ROI Measurement Framework

- Case Study: Digital Twin Deployment in Electronics Manufacturing

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