AI and ML Use Cases in ERP Systems 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 modern enterprise is undergoing a Digital Transformation fueled by data, making the integration of Artificial Intelligence (AI) and Machine Learning (ML) into Enterprise Resource Planning (ERP) systems no longer optional, but a strategic imperative. Traditional ERP systems excel at recording transactions and providing historical reporting, but they often fall short in delivering real-time prescriptive insights and automating complex, non-linear decisions. AI and ML Use Cases in ERP Systems Training Course addresses the critical need for professionals to master the application of advanced AI and ML techniques including Predictive Analytics, Natural Language Processing (NLP), and Robotic Process Automation (RPA) to evolve their ERP landscapes. By shifting from reactive data analysis to proactive decision-making and intelligent automation, organizations can unlock massive gains in Operational Efficiency, Supply Chain Resilience, and financial forecasting accuracy, securing a genuine competitive advantage in the global market.

This specialized course offers a deep dive into the practical use cases of embedding AI and ML directly within core ERP functions, moving beyond theoretical concepts to cover implementation strategies, model deployment, and governance within platforms like SAP, Oracle, and Microsoft Dynamics 365. Participants will gain the specialized knowledge to identify high-value opportunities for Intelligent Automation, from predictive maintenance in manufacturing to AI-driven demand forecasting and fraud detection in finance. Through a blend of technical instruction and real-world case studies, the program is designed to create a new generation of Intelligent ERP specialists ready to drive organizational performance, enhance user experience, and successfully navigate the complex landscape of data-driven decision support and the future of Autonomous ERP.

Programme Curriculum

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Course Duration

5 days

Course Objectives

Upon completion of this course, participants will be able to:

1. Master the fundamentals of Intelligent ERP and the role of Machine Learning algorithms.
2. Apply Predictive Analytics for robust Demand Forecasting and inventory optimization.
3. Implement Robotic Process Automation (RPA) and NLP for Automated Invoice Processing.
4. Design and deploy Predictive Maintenance models using IoT data within the ERP context.
5. Leverage AI for Supply Chain Optimization and real-time Risk Management.
6. Utilize ML to enhance Financial Planning and Analysis (FP&A), including cash flow and anomaly detection.
7. Integrate Generative AI and Conversational AI for improved ERP User Experience.
8. Formulate a Data Governance and AI Ethics strategy for ERP data.
9. Evaluate the readiness of Cloud ERP versus Legacy Systems for AI/ML integration.
10. Develop a roadmap for Intelligent Automation across core business processes
11. Apply Process Mining techniques to identify high-impact automation opportunities.
12. Customize Human Capital Management (HCM) with AI for personalized learning and Talent Acquisition optimization.
13. Drive measurable Operational Efficiency and ROI from AI-enabled ERP projects.

Target Audience

1. ERP Consultants and Architects
2. IT Managers and Directors of Enterprise Applications
3. Data Scientists and ML Engineers focused on Business Systems
4. Business Process Owners
5. Solution Architects and Business Analysts
6. CDOs/CIOs and Digital Transformation Leaders
7. Supply Chain Managers and Planners
8. Financial Analysts and Controllers

Course Modules

Module 1: Foundations of AI and ML in Intelligent ERP

- ERP Evolution
- The AI/ML Technology Stack.
- Data Preparation and Feature Engineering for ERP Datasets.
- Understanding Model Explainability in business processes.
- Case Study: Migrating a legacy manufacturing ERP from historical reporting to a real-time predictive analytics platform, focusing on the initial data quality overhaul.

Module 2: AI in Financial Management and Planning

- Automated Fraud Detection using ML classification algorithms.
- AI-powered Cash Flow Forecasting and liquidity management.
- Optimizing the Record-to-Report process with intelligent closing bots.
- Intelligent Anomaly Detection in General Ledger transactions.
- Case Study: A large retail chain uses ML to detect patterns indicative of internal fraud and automatically flag high-risk accounts payable invoices for human review, reducing losses by 10%.

Module 3: Supply Chain and Procurement Optimization

- AI-Driven Demand Forecasting and inventory level recommendations.
- Optimizing logistics and Route Planning using ML.
- Intelligent Sourcing: Supplier risk assessment and contract analysis with NLP.
- Automating purchase order generation and three-way match with RPA.
- Case Study: A global electronics manufacturer uses predictive demand models to dynamically adjust raw material procurement, resulting in a 15% reduction in safety stock and a significant drop in stockouts.

Module 4: Manufacturing and Asset Management

- Implementing Predictive Maintenance to minimize equipment downtime.
- AI for Automated Quality Control using computer vision on the assembly line.
- Dynamic Production Scheduling and resource allocation.
- Digital Twin integration for process simulation and optimization.
- Case Study: An automotive parts supplier implements IoT sensors feeding an ML model in their ERP, predicting machine failure 7 days in advance, leading to zero unplanned downtime over a fiscal quarter.

Module 5: Human Capital Management (HCM) with AI

- Talent Acquisition optimization using ML for resume parsing and candidate ranking.
- Personalized Learning and Development recommendations.
- AI-driven insights for Employee Turnover Prediction and retention strategy.

- Automating routine HR service requests with Conversational AI.
- Case Study: A professional services firm uses ML on performance data to identify key factors in employee churn and successfully implements targeted interventions, reducing voluntary turnover by 5%.

Module 6: Customer Relationship Management (CRM) and Sales

- Next-Best-Action and personalized product recommendation engines.
- AI-driven Sales Forecasting and pipeline health analysis.
- Automated Lead Scoring and routing with increased accuracy.
- Intelligent customer service and support with NLP-powered Chabot's.
- Case Study: A B2B software company deploys an AI layer to their ERP-integrated CRM, resulting in a 25% improvement in lead-to-opportunity conversion rate due to more accurate scoring and routing.

Module 7: Implementation Strategy and Architecture

- Cloud ERP and On-Premise: Architectural considerations for AI workloads.
- Data Lakes and Data Fabric strategies for ERP data ingestion.
- Model deployment using MLOps principles.
- Change Management and Upskilling for AI adoption in the enterprise.
- Case Study: An organization adopts a hybrid cloud strategy to layer new ML services onto their stable, on-premise ERP core, ensuring minimal disruption during the digital transformation.

Module 8: Governance, Ethics, and Future Trends

- Establishing AI Governance policies and a responsible AI framework.
- Addressing Bias and ensuring Fairness in ML models built on ERP data.
- Compliance and Regulatory Reporting automation.
- The rise of Autonomous ERP and Multi-Agent Systems.
- Case Study: A financial institution develops an AI ethics board to audit their loan-approval ML model for demographic bias, adjusting features and retraining to ensure regulatory compliance and fairness.

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

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