Python for ERP Automation Training Course

Professional Development Training Course Outline

Category	Enterprise Resource Planning (ERP)	**Duration**	10 Days
Base Fee	$3,000 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

In today’s fast-paced digital transformation era, organizations are rapidly adopting ERP automation solutions to optimize business processes, reduce operational costs, and increase efficiency. Python for ERP Automation Training Course is designed to empower professionals with in-demand Python programming skills, API integration techniques, and automation frameworks to streamline workflows in major ERP systems such as SAP, Oracle, Odoo, and Microsoft Dynamics 365. Learners will master the art of connecting Python with ERP modules to automate repetitive tasks, enhance data accuracy, and improve business intelligence reporting.

This hands-on course integrates real-world case studies, industry-driven automation tools, and AI-powered ERP workflows to equip participants with future-ready skills. By the end of this training, participants will be proficient in Python scripting, RPA (Robotic Process Automation), data migration, API orchestration, and ERP analytics preparing them for roles in ERP development, business automation, and data engineering across global enterprises.

Programme Curriculum

Python for ERP Automation Training Course

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Course Duration

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Course Objectives

1. Master Python fundamentals for ERP system automation.
2. Implement Python APIs for ERP data integration and synchronization.
3. Build custom automation scripts for ERP workflows using RPA libraries.
4. Understand ERP architecture and database mapping using Python.
5. Develop intelligent bots for invoice processing, inventory management, and sales orders.
6. Apply machine learning for predictive ERP analytics.
7. Automate data migration and data validation processes.
8. Integrate Python with SAP, Oracle, and Odoo ERP systems.
9. Enhance ERP reports with Python-driven dashboards and visualization tools.
10. Learn error handling, logging, and version control best practices.
11. Optimize ERP performance using Python multithreading and multiprocessing.
12. Leverage cloud-based ERP automation frameworks
13. Implement end-to-end ERP automation projects with real-time case studies.

Target Audience

1. ERP Developers and Consultants
2. Business Analysts
3. Python Programmers
4. Data Engineers and Automation Specialists
5. IT Managers and Project Leads
6. System Integrators
7. Digital Transformation Professionals
8. Graduate Students pursuing careers in **ERP and Automation**

Course Modules

Module 1: Introduction to ERP and Python

- Overview of ERP systems and business workflows
- Understanding Python’s role in automation
- Setting up the Python environment for ERP
- ERP architecture and integration layers
- Case Study: Automating purchase order entry in SAP

Module 2: Python Fundamentals for ERP Automation

- Python syntax, data structures, and functions
- File handling and exception management
- Working with JSON, XML, and CSV ERP data formats

- Python libraries for ERP integration
- Case Study: Extracting sales reports from Oracle ERP

Module 3: ERP Database Automation

- Connecting Python with SQL and NoSQL databases
- CRUD operations for ERP modules
- Data cleaning and transformation
- Automating database backups
- Case Study: Updating product catalogs in Odoo ERP

Module 4: API Integration and ERP Connectivity

- REST and SOAP API fundamentals
- Authentication and token handling
- Building Python scripts for API automation
- Using Postman for testing ERP APIs
- Case Study: Integrating CRM data with SAP ERP

Module 5: Automating ERP Workflows

- Understanding process mapping
- Automating repetitive ERP tasks using Python
- Scheduling jobs and triggers
- Workflow optimization with Celery
- Case Study: Automated invoice reconciliation

Module 6: Python for RPA in ERP

- Introduction to RPA concepts
- Using Python RPA libraries
- Automating UI-based ERP actions
- Handling exceptions and dynamic pages
- Case Study: Automating employee onboarding in Dynamics 365

Module 7: Data Migration and Transformation

- ETL (Extract, Transform, Load) process
- Migrating legacy ERP data with Python
- Handling large data volumes efficiently
- Data validation and integrity checks
- Case Study: Migrating HR records between Oracle ERP systems

Module 8: Reporting and Visualization

- Generating ERP reports using pandas and matplotlib
- Building dashboards with Plotly and Dash
- Automating Excel-based ERP analytics
- Creating interactive BI dashboards
- Case Study: Sales trend dashboard for SAP ERP

Module 9: Machine Learning for ERP Automation

- Introduction to ML algorithms for ERP data
- Predictive analytics for sales forecasting
- Anomaly detection in finance and inventory
- Integrating ML models into ERP systems
- Case Study: Predicting stock levels using Python ML

Module 10: Cloud-based ERP Integration

- Deploying Python scripts on cloud platforms
- Integrating with cloud ERPs (NetSuite, SAP Cloud)
- Using AWS Lambda for automation tasks
- Secure API communication and data encryption
- Case Study: Cloud automation for purchase approvals

Module 11: Security and Compliance in ERP Automation

- Data privacy and compliance
- Secure credential handling in Python scripts
- Audit trails and logging mechanisms
- Role-based access in automation scripts
- Case Study: Secure automation in financial modules

Module 12: Version Control and Collaboration

- Git and GitHub for ERP project versioning
- CI/CD pipelines for Python automation
- Collaborative workflow management
- Code documentation and best practices
- Case Study: ERP script deployment pipeline

Module 13: Advanced Python Automation Tools

- Selenium, PyTest, and Robot Framework
- AsyncIO and multiprocessing for ERP tasks
- Integrating AI-powered assistants in ERP
- Using Python with Power Automate
- Case Study: Intelligent bot for HR attendance automation

Module 14: Project Implementation and Testing

- ERP automation project planning
- Test case design and validation
- Troubleshooting integration issues
- Performance optimization techniques
- Case Study: Full automation lifecycle for procurement module

Module 15: Capstone Project and Certification

- Real-time ERP automation challenge
- Building a Python-based ERP automation tool
- Presentation and review by experts
- Assessment and certification

- Case Study: End-to-end ERP automation solution presentation

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	04 Dec 2026	Online	$2,000
23 Nov 2026	04 Dec 2026	Physical	$3,000

Start Date	End Date	Location	Price
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$9,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

Ready to enroll or request a customized program? Book online or contact us:

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