

Excel & VBA: Macros, Python ML & Regression

Learn to automate Excel with VBA and integrate Python machine learning models for predictive, data-driven solutions.

3 Days

24 HOURS

9

MODULES

17

TOPICS

10

HANDS-ON ACTIVITIES

COURSE OVERVIEW

Unlock the power of Excel and VBA automation while diving into the fundamentals of machine learning with “Excel & VBA Automation with Machine Learning Essentials.” This hands-on course is designed for business professionals, data analysts, and enthusiasts looking to streamline workflows, automate tasks, and integrate predictive modeling into Excel using Python. Over three days, participants will master essential Excel functions, build dynamic dashboards, automate reporting with VBA, and explore advanced programming techniques. By the end of the course, learners will develop practical machine learning models, connect Excel with Python, and create an end-to-end data-driven solution to enhance decision-making. Whether you’re new to VBA or eager to harness ML capabilities within Excel, this course offers a structured, application-focused approach to modern data automation.

WHO THIS COURSE IS FOR

Business Professionals

Data Analysts

Excel Power Users

VBA Developers

Aspiring Data Scientists

LEARNING OBJECTIVES

- Build dashboards using pivot tables and charts
- Record and edit macros using the Developer Tab
- Write VBA scripts with variables and control structures
- Implement error handling and custom user forms
- Automate pivot table refreshes and emailing of reports
- Explain supervised versus unsupervised learning concepts
- Apply data preprocessing steps such as normalisation
- Build linear and logistic regression models in Excel

9 Modules, 17 Topics

DAY 1 Excel & Intro to VBA (Lightweight)

01

Hands-on

Essentials of Excel for Business Users

TOPICS

- Quick overview: formulas, functions, formatting
- Pivot tables and charts

02

Hands-on

Introduction to Macros and VBA

TOPICS

Recording a macro and accessing Developer Tab · Basic structure of a VBA script

03

Hands-on

Simple VBA for Automation

TOPICS

- Message and Input Boxes
- Variables and control structures (If, For loops)

DAY 2 Advanced VBA & Introduction to ML

04

Hands-on

Advanced VBA Programming

TOPICS

- Error handling and debugging
- Working with ranges, worksheets, and user forms

05

Hands-on

Automating Reporting Tasks

TOPICS

Automate Pivot Tables and emailing reports

06**Hands-on**

Introduction to Machine Learning

TOPICS

- **ML concepts:** supervised vs unsupervised, target variable
- **Data preprocessing basics:** handling missing values, normalization

DAY 3 Machine Learning in Excel & Python Integration

07**Hands-on**

Predictive Modeling Techniques

TOPICS

- **Linear regression:** theory + business use cases
- **Logistic regression:** theory + classification examples

08**Hands-on**

Python Integration with Excel for ML

TOPICS

- Introduction to using Python in Excel (Python in Excel or xlwings)
- Writing Python code to perform ML (scikit-learn basics)

09**Hands-on**

Connecting VBA with ML Models

TOPICS

- Using VBA to call Python scripts or APIs
- Sending data from Excel to Python and retrieving predictions

Wrap-up and Final Project

Mini-project

Practise What You Learn

#	MODULE	ACTIVITY
01	Essentials of Excel for Business Users	Hands-on: Create a basic business dashboard
02	Introduction to Macros and VBA	Hands-on: Record and edit a macro for data formatting
03	Simple VBA for Automation	Hands-on: Write a macro to clean and process data
04	Advanced VBA Programming	Hands-on: Build a custom form to collect and store data
05	Automating Reporting Tasks	Hands-on: Generate and email automated Excel reports
06	Introduction to Machine Learning	Hands-on: Prepare a dataset in Excel for ML modeling
07	Predictive Modeling Techniques	Hands-on: Build and interpret a linear regression model in Excel using XLminer
08	Python Integration with Excel for ML	Hands-on: Predict sales using Python + Excel (via API or embedded code)
09	Connecting VBA with ML Models	Hands-on: Build an end-to-end ML pipeline connected to Excel
	Wrap-up and Final Project	Mini-project: Build a sales prediction tool using Excel + Python ML

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

FLEXIBLE DELIVERY

Learn the Way That Suits You

Classroom Training

Live Online Classes (ILO)

Fly-Me-A-Trainer (FMAT)

Flexi (Self-Paced)

1-on-1 Training

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