

# Advanced Microsoft Excel for Business Intelligence & Analytics

**Duration:** 3 Days (8 Hours per Day)

**Target Audience:** Executive-level participants from Sales, Finance, IT, and Production departments

**Prerequisite:** Basic working knowledge of Microsoft Excel

## Training Objective

Equip participants with advanced Excel skills to efficiently analyze data, automate repetitive tasks, create interactive dashboards, and build Business Intelligence solutions using Power Query, Power Pivot, and DAX.

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## Day 1 – Advanced Excel Foundations & Data Analysis

### Module 1: Excel Refresher

- Excel Interface and Productivity Tips
  - Workbook and Worksheet Management
  - Cell Referencing (Relative, Absolute & Mixed)
  - Working with Excel Tables
  - Named Ranges
  - Sorting and Filtering
  - Freeze Panes and Navigation Techniques
  - Essential Keyboard Shortcuts
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### Module 2: Advanced Formula Techniques

#### Logical Functions

- IF, Nested IF, IFS
- SWITCH
- AND, OR, NOT

#### Lookup & Reference Functions

- XLOOKUP
- Vlookup

- Two-Way Lookup
- Dynamic Lookup Techniques

### **Conditional & Statistical Functions**

- SUMIFS
- COUNTIFS
- AVERAGEIFS
- MAXIFS
- MINIFS

### **Date & Time Functions**

- EDATE
- EOMONTH
- NETWORKDAYS
- WORKDAY
- DATEDIF

### **Text Functions**

- TEXTBEFORE
- TEXTAFTER
- TEXTSPLIT
- TEXTJOIN
- CONCAT
- LEFT, RIGHT, MID
- TRIM
- SUBSTITUTE
- REPLACE

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## **Module 3: Dynamic Arrays & Data Preparation**

### **Dynamic Array Functions**

- FILTER

- SORT
- SORTBY
- UNIQUE
- SEQUENCE
- RANDARRAY

### **Data Preparation**

- Data Validation
  - Drop-down Lists
  - Dependent Drop-down Lists
  - Flash Fill
  - Text to Columns
  - Remove Duplicates
  - Find & Replace
  - Advanced Conditional Formatting
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## **Day 2 – Business Intelligence with Excel**

### **Module 4: Pivot Tables**

- Creating Pivot Tables
  - Data Summarization
  - Grouping Data
  - Custom Calculations
  - Calculated Fields
  - Report Layouts
  - Pivot Table Best Practices
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### **Module 5: Pivot Charts & Interactive Reporting**

- Creating Pivot Charts
- Slicers

- Timeline Filters
  - Drill-Down Analysis
  - Interactive Reports
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## **Module 6: Power Query (Get & Transform Data)**

### **Introduction to Power Query**

- Power Query Interface
- Importing Data from Excel, CSV, Text Files and Folders

### **Data Transformation**

- Filtering and Sorting
- Remove Duplicates
- Split and Merge Columns
- Replace Values
- Change Data Types
- Append Queries
- Merge Queries
- Group By
- Pivot and Unpivot Columns
- Fill Down and Fill Up
- Extract Date Components

### **Loading & Refreshing Data**

- Load to Worksheet
  - Load to Data Model
  - Refresh Queries
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## **Module 7: Power Pivot & Data Modeling**

- Introduction to Power Pivot
- Understanding the Data Model

- Creating Relationships
  - Managing Multiple Tables
  - Star Schema Concepts
  - Data Model Best Practices
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## **Day 3 – Advanced Reporting, Dashboarding & Automation**

### **Module 8: Introduction to DAX**

- Understanding DAX
  - Calculated Columns
  - Measures
  - Basic DAX Functions
  - SUM
  - CALCULATE
  - RELATED
  - DISTINCTCOUNT
  - DIVIDE
  - Business KPI Calculations
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### **Module 9: Dashboard Design & Data Visualization**

- Dashboard Design Principles
  - KPI Cards
  - Dynamic Charts
  - Interactive Dashboards
  - Slicers and Timelines
  - Sparklines
  - Conditional Formatting
  - Executive Reporting Best Practices
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## Module 10: Advanced Charting

- Dynamic Charts
  - Combo Charts
  - Waterfall Charts
  - Funnel Charts
  - Histogram
  - Pareto Chart
  - Forecast Sheet
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## Module 11: Excel Productivity & Automation

- Automating Repetitive Tasks with Recorded Macros
  - Workbook Protection
  - Worksheet Protection
  - Data Security Best Practices
  - Workbook Sharing and Collaboration
  - Excel Productivity Tips and Best Practices
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## Module 12: Capstone Project – End-to-End Business Intelligence Solution

Participants will work on a comprehensive business scenario by applying all the concepts learned during the training.

### Capstone Activities

- Import data from multiple sources using **Power Query**
- Clean, transform, and prepare data for analysis
- Merge and append datasets
- Build a relational **Data Model** using **Power Pivot**
- Create relationships between multiple tables
- Develop **Pivot Tables** and **Pivot Charts**
- Create **DAX Measures** and **Calculated Columns**

- Design an interactive executive dashboard with:
  - KPI Cards
  - Dynamic Charts
  - Slicers
  - Timelines
  - Conditional Formatting
- Analyze business performance and derive actionable insights
- Present findings and recommendations

### **Business Scenarios**

- Sales Performance Dashboard
- Financial Performance & Budget Analysis
- Production & Inventory Monitoring Dashboard
- IT Project & Resource Utilization Dashboard

### **Capstone Deliverable**

- A complete Business Intelligence solution in Microsoft Excel demonstrating data preparation, data modeling, analysis, visualization, dashboard creation, and executive reporting using Power Query, Power Pivot, Pivot Tables, DAX, and advanced Excel features.
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### **Key Learning Outcomes**

- Apply advanced Excel formulas and functions to solve business problems.
- Clean, transform, and consolidate data using Power Query.
- Build relational data models using Power Pivot.
- Analyze large datasets using Pivot Tables and Pivot Charts.
- Create DAX measures for business reporting and KPI analysis.
- Design interactive dashboards for executive decision-making.
- Automate repetitive tasks using recorded macros.
- Deliver end-to-end Business Intelligence solutions using Microsoft Excel.