



Microsoft Excel (MS Excel)

Microsoft Excel (MS Excel) is a spreadsheet software developed by Microsoft that allows users to organize, analyze, and visualize data. It features a grid of rows and columns where users can enter data, perform calculations with formulas and functions, create charts, and analyze information using tools like pivot tables and data validation. Excel is widely used for tasks like financial analysis, data management, reporting, and project management due to its powerful capabilities and ease of use.

| Module | Objective | Lesson 1 | Lesson 2 | Lesson 3 | Lesson 4 |
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| Module 1: Introduction to MS Excel | Get familiar with the Excel interface and basic functionality | <p>Overview of Excel</p> <ul style="list-style-type: none"> Introduction to the Excel interface (Ribbon, Workbook, Worksheet, Cells, Columns, and Rows) How to create, save, and open workbooks Navigating between sheets and workbooks Understanding Excel file formats (.xlsx, .xlsm, .csv) | <p>Basic Excel Operations</p> <ul style="list-style-type: none"> Data entry, selecting cells, and basic formatting Copying, pasting, cutting, and using shortcuts AutoFill and Flash Fill for quick data entry Introduction to data types: text, numbers, dates, and time | | |
| Module 2: Formatting and Styling | Master Excel formatting tools for a polished and professional look. | <p>Cell Formatting</p> <ul style="list-style-type: none"> Adjusting row height, column width, and cell alignment Merging cells and text wrapping Number formatting: currency, percentage, date, and time Applying borders and background colors to cells | <p>Advanced Formatting Techniques</p> <ul style="list-style-type: none"> Conditional formatting: highlight cells based on rules Using themes and styles for consistency Creating and managing custom cell styles | <p>Working with Tables</p> <ul style="list-style-type: none"> Creating and formatting Excel tables Sorting and filtering data in tables Using structured references in tables | |
| Module 3: Basic Formulas and Functions | Learn fundamental formulas and Excel functions for calculations. | <p>Introduction to Formulas</p> <ul style="list-style-type: none"> Writing simple formulas (addition, subtraction, multiplication, division) Using cell references (relative, absolute, mixed references) Understanding the order of operations (PEMDAS) | <p>Basic Excel Functions</p> <ul style="list-style-type: none"> SUM, AVERAGE, COUNT, COUNTA MIN, MAX, ROUND, and other mathematical functions IF function: logical conditions and statements | <p>Working with Dates and Times</p> <ul style="list-style-type: none"> Using DATE, YEAR, MONTH, DAY, and other date functions Time functions: NOW, TODAY, and TEXT for formatting dates/times Calculating date and time differences | |

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| Module 4: Advanced Formulas and Functions | <p>Gain advanced Excel skills in working with complex functions and formulas.</p> | Lookup Functions <ul style="list-style-type: none"> Using VLOOKUP, HLOOKUP, and XLOOKUP for searching data Understanding the difference between exact and approximate match Using INDEX and MATCH together for powerful lookups | Logical Functions <ul style="list-style-type: none"> Using IF, AND, OR, and NOT for conditional logic Nested IF functions and combining multiple conditions Using SWITCH and IFS functions for multiple conditions | Text Functions <ul style="list-style-type: none"> Using CONCATENATE, TEXTJOIN, and the & operator Extracting text: LEFT, RIGHT, MID, and FIND Changing case: UPPER, LOWER, PROPER, and TEXT functions | Array Functions and Dynamic Arrays <ul style="list-style-type: none"> Understanding and using array formulas Introduction to dynamic arrays: FILTER, SORT, UNIQUE, and SEQUENCE functions Working with arrays in Excel |
| Module 5: Data Analysis and Visualization | <p>Master techniques for analyzing data and presenting it visually.</p> | Data Sorting and Filtering <ul style="list-style-type: none"> Sorting data by one or multiple columns Applying filters to view subsets of data Custom sorting with data types (text, dates, numbers) | Using Pivot Tables <ul style="list-style-type: none"> Creating and formatting Pivot Tables Grouping data in Pivot Tables (dates, numbers, text) Using calculated fields and values in Pivot Tables Filtering and sorting Pivot Table data | Data Visualization with Charts <ul style="list-style-type: none"> Creating different chart types: bar, line, pie, scatter, etc. Customizing chart elements: titles, labels, legends, and axes Creating combo charts and adding trendlines Using sparklines for compact visual data representation | |
| Module 6: Advanced Data Management | <p>Learn advanced techniques for managing large datasets in Excel.</p> | Data Validation <ul style="list-style-type: none"> Setting data validation rules (dropdown lists, numeric ranges, etc.) Creating custom data validation formulas Error messages and input messages | Advanced Filtering and Sorting <ul style="list-style-type: none"> Using advanced filter criteria for complex data extraction Creating custom sorting rules Removing duplicates and finding unique values | Using Power Query for Data Transformation <ul style="list-style-type: none"> Introduction to Power Query editor Importing and transforming data from various sources (Excel, CSV, web, databases) Merging, appending, and cleaning data in Power Query Refreshing and automating data queries | |
| Module 7: Financial and Statistical Analysis | <p>Learn to apply Excel for financial and statistical modeling.</p> | Financial Functions <ul style="list-style-type: none"> Using financial functions: PMT, FV, PV, NPV, IRR, etc. Building loan amortization schedules Capital budgeting techniques and investment analysis | Statistical Analysis <ul style="list-style-type: none"> Using AVERAGEIF, COUNTIF, and SUMIF for conditional analysis Descriptive statistics: mean, median, mode, variance, and standard deviation Hypothesis testing using Excel functions | Forecasting and Trend Analysis <ul style="list-style-type: none"> Using Excel's built-in forecasting tools (TREND, FORECAST) Performing regression analysis and trend lines Using moving averages and exponential smoothing | |
| Module 8: Automation and Macros | <p>Automate repetitive tasks using Macros and VBA.</p> | Introduction to Macros <ul style="list-style-type: none"> Recording macros to automate tasks Editing and running recorded macros Assigning macros to buttons or shortcut keys | Introduction to VBA (Visual Basic for Applications) <ul style="list-style-type: none"> Understanding the VBA editor and interface Writing basic VBA code (variables, loops, conditionals) Automating tasks with VBA code | Advanced VBA Techniques <ul style="list-style-type: none"> Creating user forms and custom dialog boxes Writing custom functions in VBA Debugging and error handling in VBA code | |

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| <p>Module 9: Collaboration and Sharing</p> | <p>Learn how to collaborate with others and share your work in Excel.</p> | <p>Power BI Best Practices</p> <ul style="list-style-type: none"> • Best practices for data modeling and DAX calculations • Report design and usability best practices • Managing large datasets and report performance optimization | <p>Protecting Workbooks and Worksheets</p> <ul style="list-style-type: none"> • Using password protection for workbooks and worksheets • Protecting ranges and preventing edits • Sharing workbooks with others for collaboration | <p>Excel Online and Cloud Collaboration</p> <ul style="list-style-type: none"> • Using Excel Online for cloud-based collaboration • Sharing files with others in OneDrive or SharePoint • Working with Excel in real-time with multiple users | |
| <p>Module 10: Advanced Excel Topics</p> | <p>Explore advanced Excel features for specialized needs.</p> | <p>Using Power Pivot for Advanced Data Modeling</p> <ul style="list-style-type: none"> • Introduction to Power Pivot and data models • Creating relationships between multiple tables • Using DAX (Data Analysis Expressions) for advanced calculations | <p>Working with Excel Add-Ins</p> <ul style="list-style-type: none"> • Installing and using Excel add-ins (Solver, Analysis ToolPak, etc.) • Integrating third-party add-ins for specialized analysis | <p>Excel for Business Intelligence</p> <ul style="list-style-type: none"> • Using Power BI with Excel • Integrating Excel with SQL and external databases • Creating interactive dashboards with Excel | |
| <p>Module 11: Final Project</p> | <p>Apply all the Excel skills learned to solve a real-world problem.</p> | <p>Project Planning and Scope</p> <ul style="list-style-type: none"> • Defining the project objective • Identifying the data required and sources | <p>Project Planning and Scope</p> <ul style="list-style-type: none"> • Defining the project objective • Identifying the data required and sources | <p>Data Analysis and Presentation</p> <ul style="list-style-type: none"> • Presenting the project findings • Documenting the process and methodologies used | |

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