

ASPIRE TECHSOFT

ISO 9001: 2015 Certified Training Institute

Data Analytics Course

Microsoft Excel

Excel Formula

- Basic Arithmetic Formulas: SUM, SUBTRACT, MULTIPLY, DIVIDE
- AutoSum Function
- Cell References: Relative, Absolute, Mixed
- Common Statistical Functions: AVERAGE, MEDIAN, MODE
- Text Formulas: CONCATENATE, LEFT, RIGHT
- Date Formulas: TODAY, NOW, DATE
- Logical Formulas: IF, AND, OR

Formula-Based Formatting

- Introduction to Conditional Formatting Rules
- Highlighting Cells Based on Values
- Using Data Bars, Color Scales, and Icon Sets
- Custom Conditional Formatting Rules
- Managing and Editing Conditional Formatting Rules
- Using Formulas in Conditional Formatting
- Applying Conditional Formatting to Pivot Tables

Conditional Statements & Logical Operators

- IF and Nested IF Statements
- AND, OR, and NOT Operators
- Combining Multiple Logical Conditions
- Using IF with Text, Numbers, and Dates
- Applying Conditional Formatting with Logical Operators

Text Functions

- Core Functions: CONCATENATE/CONCAT, LEFT, RIGHT, MID, LEN, TRIM
- Text Case Functions: UPPER, LOWER, PROPER
- Replacing Text: SUBSTITUTE, REPLACE
- Text Search: FIND, SEARCH
- Formatting with TEXT Function (Numbers, Dates)

Date and Time Functions

- Current Date and Time: TODAY, NOW
- Constructing Dates and Times: DATE, TIME
- Extracting Date/Time Parts: DAY, MONTH, YEAR, HOUR, MINUTE, SECOND
- Calculations: DATEDIF, NETWORKDAYS, EDATE, EOMONTH

Excel Tables

- Creating and Formatting Excel Tables
- Table Styles and Customization Options
- Sorting and Filtering Table Data
- Managing Table Rows and Columns
- Structured References and Table Formulas
- Calculations and Totals in Tables
- Converting Tables to Ranges

Basic and Advanced Table Operations

- Creating Dynamic Tables
- Writing Formulas within Tables
- Advanced Filtering Techniques
- Using Slicers with Tables
- Sorting Data with Advanced Options
- Working with Subtotals
- Merging and Splitting Table Data

Data Pivoting with Examples

- Creating PivotTables and Understanding Fields/Areas
- Grouping Data in PivotTables
- PivotTable Calculations: SUM, COUNT, AVERAGE
- Creating and Customizing PivotCharts
- Filtering with Slicers and Timelines
- Advanced PivotTable Techniques: Calculated Fields, Custom Calculations

Cell Reference Functions

- Understanding and Using Cell References
- Relative vs Absolute References
- Mixed References in Formulas

- Advanced Functions: INDIRECT, OFFSET
- Linking Cells Across Sheets and Workbooks

LookUp and VLookUp

- Introduction to Lookup Functions
- Basics of VLOOKUP and HLOOKUP
- Using VLOOKUP with Exact and Approximate Match
- Nesting VLOOKUP with Other Functions
- Troubleshooting VLOOKUP Errors
- Alternatives: INDEX and MATCH

Excel Data Visualization

- Creating Charts: Column, Line, Pie
- Customizing Chart Elements: Titles, Legends, Data Labels
- Using Sparklines for Small Data Visuals
- Creating Combo Charts
- Conditional Formatting as Visualization
- Designing Heat Maps in Excel
- Using Data Bars and Color Scales for Insights

Introduction to Power Query

- What is Power Query?
- Overview of Power Query Interface
- Loading and Importing Data
- Basic Data Transformation: Filter, Sort, Remove Columns
- Combining Data from Multiple Sources
- Data Profiling Tools
- Loading Cleaned Data into Excel

Power Query Editor

- Navigating Power Query Editor
- Basic Transformations: Replace, Remove Duplicates
- Advanced Operations: Pivot, Unpivot, Group By
- Creating Custom Columns
- Merging and Appending Queries
- Managing Query Steps Effectively

Formatting Charts

- Creating Various Chart Types: Column, Line, Pie, Bar, Area, Scatter
- Chart Customization: Types, Colors, Labels, Axes
- Applying Professional Styles and Themes

Creating Reports in Excel with Dataset

- Data Preparation and Cleaning Techniques
- Building Reports using PivotTables
- Integrating Multiple Data Sources
- Enhancing Reports with Charts and Sparklines
- Designing Interactive Dashboards
- Automating Report Refreshes
- Sharing and Distributing Final Reports

Power BI Tool

Introduction to Power BI

- Overview of Power BI and its components
- Power BI service vs. Power BI Desktop
- Benefits of using Power BI for data analytics
- Key features and capabilities of Power BI
- Understanding the Power BI ecosystem
- User interface and navigation
- Basic concepts and terminology in Power BI

Installation of Power BI Desktop

- System requirements for Power BI Desktop
- Step-by-step installation guide
- Initial setup and configuration
- Updating Power BI Desktop
- Troubleshooting common installation issues
- Licensing and subscription options
- Importing sample datasets for practice

Connecting Power BI with Other Sources

- Supported data sources in Power BI
- Connecting to databases, cloud services, and files
- Data import methods and best practices
- Managing data connections
- Data refresh and scheduling
- Handling data privacy and security
- Using Power BI gateways

Basic Visualization in Power BI

- Types of visualizations available in Power BI
- Creating basic charts and graphs
- Customizing visualizations (colors, labels, titles)
- Using slicers and filters
- Creating and managing dashboards
- Adding interactivity to visualizations
- Publishing and sharing reports

Advanced Visualization in Power BI

- Using advanced chart types (waterfall, funnel, gauge)
- Creating and using bookmarks
- Implementing drill-through functionality
- Using custom visuals from the marketplace
- Creating dynamic visualizations with DAX
- Advanced interactivity techniques
- Combining multiple visualizations in a single report

Advanced DAX

- Introduction to DAX: Calculated Columns, Measures, and Tables
- Time Intelligence Functions
- Filtering Functions
- Advanced Calculations and Complex DAX Queries
- Optimizing DAX Queries for Performance
- Practical Applications of DAX in Data Models

Introduction to Power Query

- Overview of Power Query and its interface
- Connecting to various data sources
- Understanding the M language
- Basic data import and transformation
- Using the query editor for data preparation
- Managing and combining queries
- Best practices for efficient data queries

SQL (Structured Query Language)

SQL Basics for Data Analysis

- Introduction to SQL
- Setting up the SQL environment
- Basic SQL Commands
- Creating and Deleting Databases and Tables
- Importing and Exporting Data from CSV Files

Fundamentals of SQL Query

- Anatomy of SQL Query
- SQL Data Types and Operators
- Filtering and Sorting Data in SQL
- Aggregate functions in SQL

Dealing With Multiple Tables

- Grouping Data – GROUP BY
- HAVING
- Subqueries
- Joining tables using INNER JOIN, LEFT JOIN, RIGHT JOIN & FULL OUTER JOIN
- Alias in SQL queries
- Working with Multiple Tables Using Subqueries
- Using Set Operators
- Aggregating Data from Multiple Tables using GROUP BY and HAVING

Advanced SQL Joins

- Advanced Join Techniques
- Joining multiple tables

- Handling duplicate records and eliminating duplicates
- Using UNION and UNION ALL to combine data from multiple tables

Type Casting & Math Functions

- Mathematical Functions
- Type Conversion Functions
- Using CASE Statements to Perform Conditional Operations

DateTime & String Functions

- Working with date/time data in SQL
- Date/time functions
- Formatting date/time data
- String manipulation functions (e.g. UPPER, LOWER, LEFT, RIGHT, etc.)
- Regular expressions in SQL for string operations
- Using CONCAT_WS to concatenate strings with a separator

Window Functions

- Syntax of Windows Function
- Ranking functions (e.g. ROW_NUMBER, RANK, DENSE_RANK, etc.)
- Aggregate functions using windows (e.g. SUM, AVG, MAX, MIN, etc.)
- Partitioning data for window functions
- Understanding the difference between row-based and aggregate-based window functions

Complex Queries Using CTE & Pivoting

- Common Table Expressions (CTE)
- Recursive CTEs for Hierarchical Data
- Combining CTEs with Window Functions and Subqueries
- Understanding the Performance Implications of CTEs

Database Management & Schema Design

- Understanding The Relational Model and Database Schema Design
- Normalization and Denormalization of Database Tables
- Database Administration Tasks
- Implementing Indexes and Constraints for Data Integrity
- Designing Efficient Database Queries for Performance Optimization

AI Analytics Platform (Alteryx)

Introduction to Alteryx

- Overview of Alteryx
- Key Features and Benefits
- Use Cases and Applications
- Comparison with Other Data Analytics Tools
- Alteryx Designer Interface
- Licensing and Pricing
- Alteryx Community and Resources

Installation of Alteryx

- System Requirements
- Step-by-Step Installation Guide
- Post-Installation Configuration
- Licensing and Activation
- Troubleshooting Common Installation Issues
- Updating Alteryx
- Uninstalling Alteryx

In/Out Tools

- Input Data Tool
- Output Data Tool
- Directory Tool
- Text Input Tool
- Download Tool
- SharePoint Input Tool
- Blob Input Tool

Preparation Tools

- Data Cleansing Tool
- Filter Tool
- Select Tool
- Sort Tool
- Sample Tool
- Unique Tool
- Generate Rows Tool

Join Tools

- Join Tool
- Union Tool
- Find Replace Tool
- Append Fields Tool
- Make Group Tool
- Fuzzy Match Tool
- Spatial Match Tool

Transform Tools

- Cross Tab Tool
- Transpose Tool
- Formula Tool
- Multi-Field Formula Tool
- Running Total Tool
- Tile Tool
- Imputation Tool

Reporting Tools

- Table Tool
- Charting Tool
- Layout Tool
- Render Tool
- Report Map Tool
- Text Box Tool
- Email Tool

Database Tools

- Connect In-DB Tool
- Data Stream In Tool
- Filter In-DB Tool
- Formula In-DB Tool
- Join In-DB Tool
- Summarize In-DB Tool
- Write Data In-DB Tool

Documentation Tools

- Comment Tool
- Tool Container

- Block Until Done Tool
- Message Tool
- Summarize Tool
- Tool Annotation
- Metadata Output Tool

Full Workflow

- Designing a Workflow
- Best Practices for Workflow Management
- Debugging and Error Handling
- Workflow Automation
- Performance Optimization
- Sharing & Collaboration
- Real-World Workflow Examples