

ASPIRE TECHSOFT

ISO 9001: 2015 Certified Training Institute

Data Analytics Course

Overview

Excel/Advanced Excel

- Excel Basics
- Lookup Functions
- Data Validation
- Sorting & Filtering
- Templates & Reports
- More Functions
- What-If Analysis
- Macros
- Formatting & Charts
- New Features
- Advanced Excel Use Cases

Power BI

- Overview
- Power BI Desktop
- Query Editor (M Language)
- Data Modeling
- Visualizations
- Power BI Service

SQL(Structured Query Language)

- SQL Introduction
- DDL (Data Definition Language)
- DML (Data Manipulation Language)
- DQL (Data Query Language)
- Constraints

- Joins & Subqueries
- Set Operators
- Functions
- Views, Indexes, Keys
- Transactions (TCL)
- Advanced SQL

Python

- Python Basics
- Operators
- Control Statements
- Data Structures
- Functions & Modules
- File Handling
- OOP Concepts
- Advanced OOP
- Advanced Python Concepts
- Python Packages & Libraries

Projects

EXCEL/ADVANCED EXCEL

Excel Basics

- Introduction to Excel
- Excel worksheets and workbooks
- Entering and editing worksheet data
- Formulas and functions
- Customizing options
- Absolute & Relative cell reference
- Protecting & Unprotecting sheets/cells

Lookup Functions

- Lookup
- VLOOKUP (vertical) & HLOOKUP (horizontal)
- Double VLOOKUP with IFERROR
- VLOOKUP: Exact & Approximate match
- VLOOKUP with tables & dynamic ranges
- Consolidating data from multiple sheets
- Using IF + LOOKUP together
- VLOOKUP + IFERROR
- Fixing VLOOKUP
- VLOOKUP vs INDEX+MATCH

Data Validation

- Valid range for a cell
- List validation
- Custom validation using formulas

Sorting & Filtering

- Sorting tables
- Multi-level sorting

- Advanced filter

Templates

- Working with Excel templates

Reports (Pivot Tables)

- Pivot tables & pivot charts
- Create, format & customize pivot tables
- Subtotals in pivot tables
- Advanced options
- Show values as: % of row/column, running total, compare with field
- Pivot with CONCATENATE
- Viewing subtotals
- Slicers
- Pivot table using INDEX
- Consolidate multiple sheets via pivot

More Functions

- Date & Time functions
- Text functions
- Database functions
- POWER functions (COUNTIF, COUNTIFS, SUMIF, SUMIFS)

What-If Analysis

- Goal Seek
- Data Tables
- Scenario Manager

Macros

- Relative & Absolute macros
- Editing macros

Formatting

- Auto formatting
- Conditional Formatting

Charts

- Charts
- 3D graphs
- Combo charts (bar + line)
- Chart formatting
- Sharing charts dynamically with Word/PowerPoint

New Excel Features

- Sparklines
- Inline charts
- Data bars

Advance Excel Course

- EMI calculation
- Present value / Future value
- Loan calculation
- Bank passbook
- Attendance + Salary sheet
- Salary increment sheet
- Payslip
- GST calculation

String Functions

- LEN
- RIGHT
- LEFT
- COUNT

- COUNTA
- COUNTBLANK
- CONCATENATE
- Text to Column
- TRIM
- EXACT (Bhatt?)
- AND / OR / NOT
- MID + FIND
- PROPER
- SUBSTITUTE
- UPPER / LOWER
- CHAR
- REPT
- DCOUNT
- DCOUNTA

Advance Excel

- Calculated sales
- Human age calculation
- MIS reports
- Hyperlink

STATISTICS

Data Types

- Continuous
- Ordinal
- Categorical
- Time series
- Data Science terminology

Descriptive Statistics

- Probability basics

- Frequentist vs Bayesian
- Axioms of probability
- Permutations & combinations
- Conditional & marginal probability
- Joint probability
- Bayes theorem
- Probability Mass function & Probability Density Function
- Cumulative Mass Functional and Cumulative Density Function
- Mean / Median / Mode
- Variance & Standard Deviation
- Effect of transformation
- Quartiles
- Boxplots (Python implementation)

POWER BI

Overview

- What is Power BI
- Install
- Connect files
- Query Editor
- Data Model
- Creating visuals

Power BI Desktop

- Interface
- Settings
- Data Model view
- Query Editor

Query Editor (M Language)

Part 1 —

- Connect source files to PBI_-Desktop
- Data cleaning
- Append
- Format data
- Handle errors
- Pivot/Unpivot Data
- Split columns
- Create Groups & Clean Up Project

Part 2 —

- Star schema
- Dimension table
- Fact table
- Merge queries
- Join types
- References & duplicates

Data Modeling

- Relationships
- Cardinality and Types
- Cross filter direction
- Active/Inactive relationships
- M vs DAX
- DAX basics
- DAX and Data Types
- Operators and DAX Functions
- CALCULATE
- FILTER
- ALL
- ALLEXCEPT
- ADDCOLUMNS
- SUMMARIZE

- TOPN
- EARLIER
- USERRELATIONSHIP
- Calendar table

Visuals

- Basic visuals
- Tooltips & interactions
- Drilldown mode & Hierarchical
- Data Color & Conditional formatting
- Formatting reports
- Slicers
- Summarization & sorting
- Treemap / Table
- Filters types
- Working with row cards

Power BI Service

- Free, Pro, Premium licences
- Workspace
- Dashboards
- Apps
- Datasets
- Reports
- Content packs
- Data gateways
- Scheduled refresh
- Row Level Security (Desktop & Service)
- Q&A (NLP)
- Quick insights
- Subscriptions
- Mobile reports
- Export options
- Admin portal
- QR codes

- Alerts
- Embedding
- On-premise & cloud sources
- Relations between Datasets / Reports / Dashboards
- Moving the project to the cloud
- Staying Updated

SQL(Structured Query Language)

Database Basics

- Data
- Information
- Database
- DBMS
- RDBMS
- Client–Server

SQL Introduction

- SQL Types: DDL, DML, DQL, DCL, TCL
- SQL Syntax
- SQL Standards

DDL

- CREATE
- DROP
- ALTER
- TRUNCATE
- RENAME

DML

- INSERT
- UPDATE
- DELETE

DQL

- SELECT
- DISTINCT
- WHERE
- BETWEEN
- IN
- LIKE
- IS NULL
- ORDER BY
- GROUP BY
- HAVING

Constraints

- PRIMARY KEY
- FOREIGN KEY
- UNIQUE
- NOT NULL
- CHECK
- DEFAULT

Joins

- INNER JOIN
- LEFT JOIN
- RIGHT JOIN
- FULL JOIN
- CROSS JOIN
- SELF JOIN

Subqueries

- Single-row
- Multi-row
- Nested
- Correlated

Set Operators

- UNION
- UNION ALL
- INTERSECT
- MINUS

Functions

Aggregate: COUNT, SUM, AVG, MIN, MAX

String: UPPER, LOWER, SUBSTR, LENGTH, TRIM, REPLACE

Date: NOW, SYSDATE, DATE_ADD, DATE_DIFF

Math: ROUND, CEIL, FLOOR

Views

- CREATE VIEW
- UPDATE VIEW
- DROP VIEW

Indexes

- Single-column
- Composite
- Unique
- Drop index

Keys

- Primary key
- Composite key
- Candidate key
- Alternate key
- Super key
- Foreign key

Transactions (TCL)

- COMMIT
- ROLLBACK
- SAVEPOINT
- START TRANSACTION

Advanced SQL

- Window functions
- Ranking functions
- CTE (WITH)
- Recursive CTE
- CASE
- Stored procedures
- Functions
- Triggers
- Cursors

PYTHON

Python Introduction

- History
- Features
- Installation
- Interactive mode
- Script mode
- Python versions

Python Basics

- Keywords
- Identifiers
- Variables
- Constants
- Data types
- Comments
- Type casting

- Input & Output

Operators

- Arithmetic
- Assignment
- Comparison
- Logical
- Bitwise
- Identity
- Membership

Control Statements

- if
- if-else
- elif
- Nested if
- match-case
- while loop
- for loop
- Nested loops
- break
- continue
- pass

Strings

- String creation
- Indexing
- Slicing
- String methods
- String formatting
- Escape characters

Lists

- Creating lists
- Indexing
- Slicing
- List methods
- List comprehension
- Nested lists

Tuples

- Creating tuples
- Indexing
- Tuple methods
- Packing & Unpacking

Sets

- Creating sets
- Set methods
- Set operations

Dictionaries

- Key–value pairs
- Dictionary methods
- Nested dictionaries

Functions

- Defining function
- Arguments
- *args
- **kwargs
- Default arguments
- Lambda
- Return statement
- Recursion

Modules

- Creating modules
- Importing modules
- Built-in modules
- sys
- math
- random
- datetime
- os

File Handling

- Open modes
- Read
- Write
- Append
- File pointer
- with statement
- Exception handling in files

Exception Handling

- try
- except
- else
- finally
- raise
- Custom exceptions

Object-Oriented Programming (OOP)

- Class
- Object
- init
- Methods
- Self

- Inheritance
- Single inheritance
- Multiple inheritance
- Multilevel inheritance
- Hierarchical inheritance
- Hybrid inheritance
- Polymorphism
- Method Overloading
- Method Overriding
- Encapsulation
- Abstraction
- super()
- Class variables
- Instance variables
- Static methods
- Class methods

Advanced OOP

- Inner classes
- Property decorators
- Getter & Setter

Regular Expressions

- re module
 - match
 - search
 - findall
 - split
 - sub
 - Meta characters
 - Special sequences
 - Quantifiers
-

Iterators & Generators

- iter()
- next()
- Generator functions
- yield
- Generator expressions

Comprehensions

- List comprehension
- Tuple comprehension
- Set comprehension
- Dict comprehension

Lambda, Map, Filter, Reduce

- lambda
- map
- filter
- reduce (functools)

Decorators

- Function decorators
- Chained decorators
- Decorators with arguments

Multithreading & Multiprocessing

- Thread class
- Locks
- Semaphores
- Pool
- Process
- Queues

Python Packages

- pip
- venv
- requirements.txt
- Installing libraries

Database Connectivity

- MySQL connector
- CRUD operations
- Cursor
- Transactions

File Formats

- CSV
- JSON

Python Libraries

- NumPy
- Pandas
- Matplotlib
- Seaborn

Projects

- Hands on Experience provided across PowerBi, Excel, SQL and Python

Resume preparation.