Skill Ascent
by D BASE SOLUTIONS PVT. LTD.,

DATA ANALYTICS

DURATION
90 Days

COURSE OVERVIEW

The Data Analytics Program provides a comprehensive roadmap for aspiring Data Analysts. Learners will master Excel, SQL, Python, Statistics, Data Visualization, and BI tools like Power BI and Tableau. The program combines hands-on projects, case studies, and real-world datasets to prepare students for data-driven decision-making roles.

MODULE 1: MICROSOFT EXCEL

BASIC MODULE

- Introduction to Microsoft Excel
- Installing Excel on Windows and Mac
- Getting familiar with the Excel interface
- Introduction to Tables
- Inputting data into cells
- Introduction to Formulas & Formula Behavior
- Built-in Functions (SUM, AVERAGE, COUNT, etc.)
- Combining Data From Two Tables

ADVANCED MODULE

- Pivot Tables: Creation, Customization, and Reporting
- Nested IF Statements
- VBA Basics to automate tasks
- Creating Custom Functions using VBA

MODULE 2: STATISTICS FOR DATA ANALYTICS

DESCRIPTIVE STATISTICS

- Types of Data: Qualitative & Quantitative
- Data Collection Methods, Population & Sample
- Sampling Techniques: Random, Stratified, Systematic
- Measures of Central Tendency: Mean, Median, Mode
- Measures of Spread: Range, Variance, Standard Deviation
- Measures of Shape: Skewness, Kurtosis
- Percentiles, Quartiles, Interquartile Range (IQR)
- Outlier Detection
- Correlation & Covariance

PROBABILITY & DISTRIBUTIONS

- Basics of Probability
- Probability Distributions: Normal, Binomial, Poisson
- Standard Error & Central Limit Theorem
- Confidence Intervals

INFERENTIAL STATISTICS

- Hypothesis Testing: Null & Alternative Hypotheses
- Type-I and Type-II Errors
- P-value Interpretation
- One-Sample Tests: Z-test, T-test
- Two-Sample Tests: Independent & Paired T-tests
- ANOVA Test
- Chi-square Test

MODULE 3: PYTHON FOR DATA ANALYTICS

BASIC PYTHON

- Introduction & Installation of Python
- Variables, Input/Output
- Data Types & Data Structures (List, Tuple, Dictionary, Set)
- Operators, Conditional Statements, Loops
- Functions: Definition, Parameters, Return Values

ADVANCED PYTHON

- Advanced Functions
- File Handling
- Error & Exception Handling

PYTHON FOR DATA SCIENCE LIBRARIES

NUMPY

- Introduction & Array Creation
- Array Attributes & Indexing
- Slicing & Iteration over Arrays
- Array Manipulation & Mathematical Operations

PANDAS

- Series & DataFrame Creation
- Column & Row Operations
- Merging & Concatenation
- Importing Data from multiple sources
- Summarizing, Sorting, Filtering Data
- GroupBy Operations
- Exploratory Data Analysis (EDA): Univariate, Bivariate, Multivariate Analysis

MODULE 4: DATA VISUALIZATION

PANDAS

- Histogram, Boxplot, Scatter Plot, Line Plot
- Pie Chart, Bar Chart, Subplots

SEABORN

- Bar Plot, Count Plot, Box Plot
- Line Plot, Scatter Plot
- Regression Plot, Pair Plot, Heatmap, Violin Plot

DATA CLEANING & PREPROCESSING

- Handling Wrong Data & Data Types
- Removing Duplicates
- Handling Missing Values
- Handling Outliers
- Dropping unnecessary columns

MODULE 5: SQL FOR DATA ANALYTICS

BASIC MODULE

- Introduction to Databases: Database vs Spreadsheet
- DBMS vs RDBMS
- Introduction to SQL and NoSQL
- MySQL Installation
- SQL Data Types, Keys, and Constraints
- CRUD Operations
- SQL Commands, Clauses, Operators, and Wildcards
- Aggregation Functions

ADVANCED MODULE

- SQL Joins: Inner, Left, Right, Full
- Normalization & Denormalization
- SQL Functions & Subqueries
- Common Table Expressions (CTE)
- Views & Stored Procedures

MODULE 6: POWER BI

BASIC MODULE

- Introduction to Power BI
- Connectivity Modes
- Power BI Desktop: Data Transformation & Cleaning
- Data Visualization & Dashboard Creation

ADVANCED MODULE

- Introduction to DAX
- Data Types & Calculations in DAX
- Creating Calculated Columns & Measures
- DAX Syntax, Functions, Operators
- Table Filtering & Advanced Analysis

MODULE 7: TABLEAU

BASIC MODULE

- Introduction to Tableau & Interface
- Data Connections & Visual Analytics
- Basic Charts, Sorting, Filtering, Grouping, and Sets
- Built-in Functions: Number, String, Date, Logical, Aggregate
- Operators & Syntax Conventions
- Table Calculations

ADVANCED MODULE

- Advanced Calculations & Trend Lines
- Reference Lines & Forecasting
- Advanced Charts & Plots
- Dashboard Creation & Interactivity

OUTCOME

Upon completing this 90-day Data Analytics course, learners will

- Gain expertise in Excel, Python, SQL, Power BI, and Tableau
- Perform data cleaning, preprocessing, visualization, and analysis
- Apply statistical and probability methods for data-driven decision-making
- Build real-world dashboards and analytics projects
- Be job-ready for roles as Data Analyst, BI Analyst, or Reporting Analyst