

## **DATA ANALYTICS**

| Main Topic                        | Sub Topic                                                                       |
|-----------------------------------|---------------------------------------------------------------------------------|
| Excel (Basics<br>to Advanced)     | • Introduction to Excel: Workbooks, formatting, data types, formulas, operators |
|                                   | • Functions: SUM, AVERAGE, IF, COUNTIF, VLOOKUP, INDEX–MATCH, IFERROR           |
|                                   | • Data Cleaning: TRIM, SUBSTITUTE, TEXT, CONCAT, FIND, LEFT, RIGHT, MID         |
|                                   | Data Validation, Conditional Formatting, Sorting & Filtering                    |
|                                   | • Pivot Tables, Pivot Charts, and Dashboard Creation                            |
|                                   | • Power Query & Power Pivot: Data extraction, cleaning, and transformation      |
|                                   | Automation using Macros & Basic VBA                                             |
|                                   |                                                                                 |
| MySQL<br>(Database<br>Management) | Introduction to Databases and RDBMS Concepts                                    |
|                                   | • SQL Commands: DDL, DML, DCL, TCL                                              |
|                                   | • Constraints: Primary Key, Foreign Key, Domain & Referential Integrity         |
|                                   | • Queries: SELECT, WHERE, GROUP BY, HAVING, ORDER BY                            |
|                                   | • Joins: Inner, Left, Right, Full, Cross, Self Joins                            |
|                                   | Subqueries, Views, Triggers, Indexing, Stored Procedures                        |
|                                   | Analytical & Ranking Functions: RANK, DENSE_RANK, ROW_NUMBER                    |
| Tableau (Data<br>Visualization)   | a Lutus du sti on to Tableau and Data Visualization Desire                      |
|                                   | • Introduction to Tableau and Data Visualization Basics                         |
|                                   | • Connecting Data Sources (Excel, MySQL, etc.)                                  |
|                                   | • Dimensions, Measures, Filters, Parameters, and Sets                           |

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|                                          | Calculated Fields and Quick Table Calculations                           |
|------------------------------------------|--------------------------------------------------------------------------|
|                                          | Data Blending, Joins, and Relationships                                  |
|                                          | • Charts: Bar, Line, Donut, Funnel, Word Cloud, Gantt, etc.              |
|                                          | Dashboards & Storyboards: Interactive and Drill-Down Dashboards          |
|                                          | Publishing Dashboards on Tableau Public                                  |
|                                          |                                                                          |
| Power BI<br>(Business<br>Intelligence)   | • Introduction to Power BI Desktop                                       |
|                                          | • Data Connections: Excel, RDBMS, Web                                    |
|                                          | Data Modelling: Relationships, Hierarchies, Calculated Columns           |
|                                          | • Visualizations: Charts, Tables, KPIs, Cards, Maps, Custom Visuals      |
|                                          | • Filters, Slicers, and Drill-Down                                       |
|                                          | DAX: Calculated Columns, Measures, and Basic DAX Functions               |
|                                          | Publishing and Sharing Reports, Row-Level Security, Data Refresh         |
|                                          |                                                                          |
| Python (Basics<br>for Data<br>Analysis)  | Introduction to Python and Anaconda                                      |
|                                          | • Data Types, Variables, Operators, Control Statements, Loops, Functions |
|                                          | Modules: Math, Datetime, Calendar, Regular Expressions                   |
|                                          | • Libraries:                                                             |
|                                          | NumPy – Arrays and numerical operations                                  |
|                                          | • Pandas – Data Frames, Cleaning, Analysis                               |
|                                          | Matplotlib & Seaborn – Data Visualization                                |
|                                          |                                                                          |
|                                          | Introduction to Statistical Analysis                                     |
| Statistics & Data Analytics Fundamentals | Probability, Sampling, Estimation, Hypothesis Testing                    |
| Data Analytics                           |                                                                          |

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- Correlation, Regression, ANOVA, Chi-Square
- Data Cleaning & Imputation Techniques
- Central Tendency, Dispersion, Skewness, Kurtosis, Box Plot
- Descriptive, Diagnostic, Predictive & Prescriptive Analytics
- Data Visualization for Decision-Making

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