



Power BI



DATA ANALYSIS

1. Introduction to Data/Statistics
2. Python Programming
3. Introduction Machine Learning
4. SQL (Structured Query Language)
5. Advanced MS Excel
6. Power Bi
7. Google Looker Studio
8. Tableau
9. Final Project



Tableau



python™



Google Data Studio



Duration: 3 Months

MODULE 1 : INTRODUCTION TO DATA / STATISTICS



- **Data Types – Quantitative, Qualitative, Structured, Unstructured** ; Types of data: numerical, categorical, ordinal, nominal, Sources of data (databases), Structured vs unstructured data examples
- **Descriptive Statistics – Mean, Median, Mode, Variance**: Central tendency and dispersion Standard deviation, range, percentiles, quartiles, Outliers and skewness, Practical calculation using Python (NumPy/Pandas)
- **Inferential Statistics – Correlation, Probability**: Correlation vs causation, Covariance, Pearson and Spearman correlation, Probability basics, types (independent, conditional)

MODULE 2 : PYTHON PROGRAMMING



- Basics of Python, Variables, Data Types, Operators, Conditional Statements, Looping Statements, Functions, Lambdas, Map, Filter, Reduce
- OOPs, Classes and Objects, Modules, Libraries, Exception Handling
- Libraries: NumPy, Pandas, Matplotlib, Seaborn

MODULE 3 : INTRODUCTION TO MACHINE LEARNING



- **Foundations of Machine Learning, Types of Machine Learning** : What is Machine Learning and its applications, Supervised, unsupervised.
- **Common ML Algorithms** : Linear regression, Simple hands-on demo with Scikit-learn

MODULE 4 : SQL



- Introduction to Databases and SQL, Retrieving Data with SELECT Queries
- Filtering and Sorting Data, Aggregate Functions and Grouping Data
- Joins and Relationships between Tables
- Data Manipulation (INSERT, UPDATE, DELETE)
- Analytical Querying and Case Studies, Integration, Optimization & Final Project



LEARN TOP 5 A.I TOOLS



MID JOURNEY



NOTION



CO-PILOT



BARD - GOOGLE

MODULE 5 : ADVANCED MS EXCEL



• Introduction to Excel, Advanced Functions and Formulas

Excel interface, ribbons, and shortcuts, Logical functions: IF, AND, OR, NOT, Text, date, and lookup functions

• Data Analysis using Lookup Formulas, Pivot Tables, and Visualization Techniques

VLOOKUP, HLOOKUP, INDEX-MATCH, Creating and customizing pivot tables, Conditional formatting and data validation

• Advanced Chart Techniques and Dashboarding

Combination charts, dynamic charts, Slicers and timeline filters, Dashboard design principles



MODULE 6 : POWER BI

• Connecting to Data Sources : Introduction , Connecting Excel, CSV.

• Power Query: Data Cleaning and Transformation : Removing duplicates, splitting columns, merging queries , Data profiling and applied steps

• Data Modelling and DAX : Relationships, primary and foreign keys, DAX basics: CALCULATE, SUMX, FILTER, RELATED, Creating measures and calculated columns

• Power View and Data Visualizations : Building visuals (cards, charts, tables), Drill-through, filters, and slicers, Designing interactive dashboards



MODULE 7 : GOOGLE LOOKER STUDIO

• Connecting to Data Sources, Creating Dashboards and Reports

• Exploring Data: Views, Fields, and Filters

• Advanced Features: Derived Tables, Merged Queries, and LookML

MODULE 8 : TABLEAU



• Introduction to Tableau, Measures and Calculated Fields, Charts and Analysis using Tableau.

MODULE 9 : FINAL PROJECT



• Select one tool (Python, Power BI, Tableau, or Looker Studio)

• Define problem statement and dataset

• Perform end-to-end analysis (data cleaning, visualization, insights)

• Present findings and recommendations

• Evaluation on creativity, clarity, and data storytelling