

DATA ANALYSIS

12 Weeks Curriculum

Working with Excel, Powerbi, SQL
& Python for analysis.

PREREQUISITE

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- Willingness to learn
- Laptop (8GB RAM minimum)
- Basic Computer Knowledge

WHAT YOU WILL LEARN

You will gain the skills to analyze data effectively and uncover meaningful insights that drive business decisions.

By the end of this course you will have;

1. Developed a strong understanding of data analysis concepts and the role of a data analyst
2. Mastered working with Excel for cleaning, analysis, and building dashboards
3. Gained proficiency in SQL to query, join, and aggregate data from databases
4. Built interactive dashboards in Power BI to visualize and communicate insights
5. Applied Python (Pandas, Matplotlib, Seaborn) for data wrangling and visualization
6. Built a capstone project for your portfolio that demonstrates data analysis expertise



SYLLABUS

Month 1 — Data Foundations & Excel for Analysis

Week 1: Introduction to Data Analysis

- **Topics:**
 - What is Data Analysis?
 - Types of Data (Structured vs Unstructured)
 - Data Lifecycle & Roles of a Data Analyst
- **Activities:**
 - Case study: Data-driven decisions
 - Simple dataset exploration (Excel)

Week 2: Excel Basics for Analysis

- **Topics:**
 - Excel interface & navigation
 - Data entry, formatting, and cleaning basics
 - Sorting, filtering, conditional formatting
- **Activities:**
 - Clean a raw dataset (remove duplicates, format dates, text-to-columns)

Week 3: Excel Functions & Analysis Tools

- **Topics:**
 - Essential formulas: SUM, AVERAGE, COUNTIF, VLOOKUP, INDEX-MATCH
 - Logical functions (IF, AND, OR)
 - PivotTables & PivotCharts
- **Activities:**
 - Build a mini sales dashboard in Excel



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Week 4: Data Visualization in Excel

- **Topics:**
 - Chart types (line, bar, pie, combo)
 - Best practices in data visualization
 - Using Excel's Data Analysis ToolPak
- **Activities:**
 - Visualize sales & marketing KPIs
 - Mini-project: Build an Excel-based KPI Dashboard

Month 2 — SQL & Power BI Foundations

Week 5: SQL for Data Analysis — Basics

- **Topics:**
 - Introduction to databases & SQL
 - SELECT, WHERE, ORDER BY
 - Filtering & basic conditions
- **Activities:**
 - Query a sample database (employees, sales)

Week 6: SQL Joins & Aggregations

- **Topics:**
 - INNER, LEFT, RIGHT, FULL JOIN
 - Aggregation functions: COUNT, SUM, AVG, MIN, MAX
 - GROUP BY & HAVING
- **Activities:**
 - Query sales by region & product

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Week 7: Power BI Basics

- **Topics:**
 - Introduction to Power BI interface
 - Importing data from Excel & SQL
 - Data modeling & relationships
- **Activities:**
 - Build a simple Power BI report

Week 8: Power BI Visualization & DAX

- **Topics:**
 - Power BI visualizations (bar, map, KPI cards)
 - Introduction to DAX (Calculated columns, measures)
 - Publishing & sharing dashboards
- **Activities:**
 - Build a sales performance dashboard in PowerBI

Month 3 — Python for Analysis & Capstone

Week 9: Python Basics for Data Analysis

- **Topics:**
 - Python setup (Anaconda/Jupyter)
 - Variables, data types, lists, dictionaries
 - Reading/Writing CSV files with Pandas
- **Activities:**
 - Load & explore datasets in Jupyter

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Week 10: Data Wrangling with Pandas

- **Topics:**
 - DataFrames & Series
 - Handling missing values
 - Filtering, grouping, merging datasets
- **Activities:**
 - Clean a messy dataset (customer data)

Week 11: Data Visualization in Python

- **Topics:**
 - Matplotlib & Seaborn basics
 - Histograms, scatter plots, heatmaps
 - Styling & storytelling with visuals
- **Activities:**
 - Visualize customer purchase patterns

Week 12: Capstone Project

- **Capstone Objective:** Apply Excel + SQL + Power BI + Python in an integrated analysis.
- **Project Ideas:**
 - Retail sales analysis dashboard
 - Customer churn prediction (EDA-focused, not ML)
 - COVID-19 dataset exploration & reporting



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Project Deliverables:

- Clean dataset
- SQL queries
- Power BI Dashboard
- Python Jupyter Notebook analysis
- Short presentation

CONTACT INFORMATION

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