Data Analyst

📌 Module 1: Introduction to Data Analytics

- What is Data Analytics?
- Importance of Data Analytics in Business
- Types of Data Analytics (Descriptive, Diagnostic, Predictive, Prescriptive)
- Data Science vs Data Analytics vs Business Intelligence
- Real-World Applications of Data Analytics

📌 Module 2: Understanding Data & Data Collection

- Types of Data (Structured, Semi-Structured, Unstructured)
- Data Sources (Databases, APIs, Web Scraping, Files, Cloud)
- Data Warehousing Concepts
- ETL (Extract, Transform, Load) Process

📌 Module 3: Data Handling & Cleaning using Excel & Google Sheets

- Excel Basics & Formulas
- Data Cleaning Techniques (Removing Duplicates, Handling Missing Data)
- Data Validation & Conditional Formatting
- Pivot Tables & Data Visualization in Excel
- Automating Reports with Macros

📌 Module 4: SQL for Data Analysts

- Introduction to Databases & SQL
- SQL Commands (SELECT, INSERT, UPDATE, DELETE)
- Filtering & Sorting Data (WHERE, ORDER BY, GROUP BY)
- Joins & Subqueries (INNER, LEFT, RIGHT, FULL Joins)

- Window Functions & CTEs
- Optimizing SQL Queries for Performance
- Hands-on: Writing Complex Queries on Real Datasets

📌 Module 5: Python for Data Analytics

Python Basics

- Python Setup & Installation
- Variables, Data Types & Operators
- Loops & Conditional Statements
- Functions & Lambda Functions

Pandas & NumPy for Data Manipulation

- DataFrames & Series in Pandas
- Handling Missing Values
- Grouping & Aggregations
- Merging & Joining Data
- Working with Time Series Data

Matplotlib & Seaborn for Data Visualization

- Line, Bar, Scatter, Histogram Charts
- Heatmaps, Boxplots, Violin Plots
- Customizing Plots & Styling

📌 Module 6: Data Visualization with Power BI & Tableau

- Introduction to Data Visualization Tools
- Connecting to Data Sources
- Creating Interactive Dashboards
- Filters, Slicers & Parameters
- Storytelling with Data

📌 **Module 7: Statistics & Probability for Data Analytics**

- Measures of Central Tendency (Mean, Median, Mode)
- Measures of Dispersion (Variance, Standard Deviation)
- Probability Distributions (Normal, Binomial)
- Hypothesis Testing (T-Test, Chi-Square, ANOVA)
- Correlation & Regression Analysis

📌 **Module 8: Exploratory Data Analysis (EDA)**

- Identifying Patterns & Trends
- Outlier Detection Techniques
- Feature Engineering & Data Transformation
- Hands-on EDA with Real-World Datasets

📌 **Module 9: Business Intelligence & Reporting**

- Introduction to BI Tools
- Creating Reports & Dashboards
- Automating Data Refresh & Scheduling Reports
- Storytelling with Data

📌 **Module 10: Machine Learning Basics for Data Analysts**

- Introduction to Machine Learning
- Supervised vs Unsupervised Learning
- Regression & Classification Models
- Clustering (K-Means, Hierarchical)
- Implementing ML Models using Scikit-Learn

📌 **Module 11: Working with Big Data & Cloud Platforms**

- Introduction to Big Data Technologies
- Using Google BigQuery & AWS Redshift
- Hadoop & Spark Basics
- Handling Large Datasets in SQL & Python

📌 **Module 12: Data Governance & Ethics**

- Data Privacy & Security
- GDPR & Compliance Regulations
- Ethical Considerations in Data Analytics

📌 **Module 13: Real-Time Data Analysis Projects**

- Building a Sales Dashboard
- Customer Segmentation Analysis
- Predictive Analytics for Business Growth
- Resume & Interview Preparation for Data Analyst Roles