Data Analyst Course Syllabus

Total Duration: 90hrs

Module 1: Foundations of Data Analytics

Chapter 1: Introduction to Data Analytics

- What is Data Analytics
- Why is Data Analytics Important
- Types of Data Analytics
- The Role of a Data Analyst
- Tools Used by Data Analysts
- Real-Life Applications of Data Analytics
- Career Path & Opportunities for Data Analysts

Chapter 2: Understanding Data Types and Data Sources

- Introduction to Data
- Types of Data
- Sources of Data
- Data Collection Techniques

Chapter 3: Tools and Technologies for Data Analysis

- Overview of Data Analysis Tools
- Excel for Data Analysis

- SQL for Managing Databases
- Python for Data Analysis *(Intro level)*
- Tableau and Power BI for Data Visualization *(Basics only)*

Chapter 4: Data Cleaning and Preprocessing

- Introduction to Data Cleaning
- Importance of Data Cleaning
- Common Data Issues and Their Solutions
- Steps in Data Cleaning Process
- Tools for Data Cleaning *(Excel, Python basic libraries)*
- Best Practices for Data Cleaning

Chapter 5: Exploratory Data Analysis (EDA)

- What is Exploratory Data Analysis (EDA)
- Importance of EDA in Data Analysis
- Key Steps in Exploratory Data Analysis
- Tools for Performing EDA *(Excel, Python – pandas/matplotlib overview)*
- Best Practices for EDA

Chapter 6: Data Visualization

- Introduction to Data Visualization
- Importance of Data Visualization

- Types of Data Visualizations *(Bar, Pie, Line, Scatter)*
- Tools for Data Visualization *(Excel, Power BI basics)*
- Best Practices for Data Visualization

Chapter 7: Data Preparation for Analysis

- Introduction to Data Preparation
- Importance of Data Preparation
- Steps in Data Preparation *(Data structuring, missing value handling, formatting)*

Chapter 8: Statistical Concepts for Data Analysis

- Introduction to Statistics in Data Analysis
- Descriptive Statistics *(Mean, Median, Mode, Standard Deviation)*
- Inferential Statistics *(Sampling, Basic Probability)*
- Hypothesis Testing *(Conceptual intro)*
- Correlation and Regression *(Basic overview)*

Module 1: Data Analysis & ML

Chapter 9: Data Analysis Techniques

- Introduction to Data Analysis Techniques
- Descriptive Analysis
- Diagnostic Analysis *(Simple real-life example)*
- Predictive Analysis *(Regression overview)*

Chapter 10: Data Reporting and Visualization

- Introduction to Data Reporting and Visualization
- Types of Data Reports
- Data Visualization Techniques *(As per real-world dashboards)*
- Tools for Data Reporting *(Excel, Power BI)*
- Best Practices for Data Reporting and Visualization
- Example Use Case: Data Reporting in Retail *(Summarized case only)*

Chapter 11: Machine Learning for Data Analysis

- What is Machine Learning
- Types of Machine Learning
- Common ML Algorithms *(Linear Regression, Decision Tree – conceptual only)*
- Steps to Perform Machine Learning *(High-level workflow)*
- Real-world Applications *(Retail, Healthcare – examples only)*

Chapter 12: Practical Exercises in Data Analysis

- Exercise: Data Cleaning and Preparation
- Exercise: Descriptive Statistics
- Exercise: Data Visualization *(Excel or Tableau)*
- Exercise: Predictive Analysis Using ML *(Demo model only)*

- Exercise: Real-world Problem Solving *(Mini project)*
- Exercise: Building Dashboards
- Exercise: Ethical and Legal Compliance Checklist *(brief intro only)*