



Data Analyst Course Syllabus

(Module-wise with Duration)

Total Duration: 6 Months

Total Hours: 240 – 300 Hours

Module 1: Introduction to Data Analytics

Duration: 10 Hours

Topics Covered

- Introduction to Data Analytics
 - Importance of Data in Business
 - Types of Data Analytics
 - Descriptive Analytics
 - Diagnostic Analytics
 - Predictive Analytics
 - Prescriptive Analytics
 - Data Analytics Life Cycle
 - Roles in Data Field
 - Data Analyst vs Data Scientist
 - Applications of Data Analytics
-





Module 2: Microsoft Excel for Data Analysis

(Duration: 40 Hours)

Excel Basics

- Excel Interface
- Workbook & Worksheet
- Data Entry Techniques
- Formatting & Data Types

Excel Functions

- Logical Functions (IF, AND, OR)
- Lookup Functions (VLOOKUP, HLOOKUP, XLOOKUP)
- Text Functions
- Date & Time Functions
- Statistical Functions

Data Analysis Tools

- Sorting & Filtering
- Conditional Formatting
- Data Validation
- Remove Duplicates

Pivot Tables & Charts

- Pivot Table Creation
- Pivot Chart
- Data Summarization
- Dynamic Reports

Advanced Excel

- Power Query
- Power Pivot
- Excel Dashboards
- Introduction to Macros





Module 3: Statistics for Data Analysis

(Duration: 25 Hours)

Descriptive Statistics

- Mean
- Median
- Mode
- Variance
- Standard Deviation

Probability

- Basics of Probability
- Probability Distributions

Hypothesis Testing

- Null Hypothesis
- T-Test
- Chi-Square Test

Correlation & Regression

- Correlation Analysis
- Linear Regression
- Multiple Regression





Module 4: SQL for Data Analysis

Duration: 40 Hours

Database Fundamentals

- What is Database
- DBMS vs RDBMS
- Tables & Relationships

SQL Basics

- SELECT Statement
- WHERE Clause
- ORDER BY
- LIMIT

Data Aggregation

- GROUP BY
- HAVING
- Aggregate Functions
(SUM, AVG, COUNT, MAX, MIN)

SQL Joins

- Inner Join
- Left Join
- Right Join
- Full Join

Advanced SQL

- Subqueries
- Window Functions
- Views
- Indexing





Module 5: Python for Data Analysis

(Duration: 50 Hours)

Python Fundamentals

- Python Installation
- Variables
- Data Types
- Operators
- Loops
- Functions

Python Libraries

- NumPy
- Pandas
- Matplotlib
- Seaborn

Data Analysis using Python

- Data Import
- Data Cleaning
- Handling Missing Data
- Data Transformation
- Data Aggregation

Data Visualization

- Line Chart
- Bar Chart
- Histogram
- Scatter Plot
- Heatmaps





Module 6: Data Cleaning & Data Preparation

(Duration: 15 Hours)

Topics

- Data Cleaning Techniques
 - Handling Missing Values
 - Removing Duplicates
 - Outlier Detection
 - Data Transformation
 - Data Normalization
-





Module 7: Power BI for Data Visualization

(Duration: 35 Hours)

Introduction

- Power BI Overview
- Installation & Interface

Data Handling

- Import Data
- Data Transformation
- Data Modeling

DAX Functions

- Calculated Columns
- Measures
- Time Intelligence

Visualization

- Charts & Graphs
- Interactive Reports
- Dashboard Design

Publishing

- Power BI Service
- Sharing Reports





Module 8: Tableau for Data Visualization

(Duration: 20 Hours)

Topics

- Tableau Interface
 - Data Connection
 - Data Blending
 - Charts & Graphs
 - Dashboards
 - Storytelling with Data
-





Module 9: Business Intelligence Concepts

(Duration: 10 Hours)

Topics

- Business Intelligence
 - KPI (Key Performance Indicators)
 - Data Warehousing
 - ETL Process
 - OLAP vs OLTP
-





Module 10: Real-World Projects

(Duration: 25 Hours)

Projects

- Sales Data Analysis
 - Customer Segmentation
 - Marketing Campaign Analysis
 - Financial Data Analysis
 - E-commerce Dashboard
-





Module 11: Capstone Project

(Duration: 15 Hours)

Students work on **complete end-to-end data analysis project**

Steps:

1. Data Collection
 2. Data Cleaning
 3. Data Analysis
 4. Visualization Dashboard
 5. Business Insights Report
-





Module 12: Interview Preparation

(Duration: 10 Hours)

Topics

- Excel Interview Questions
- SQL Interview Questions
- Python Interview Questions
- Case Study Questions
- Resume Building
- Portfolio Development

Tools Covered in Data Analyst Course

- Microsoft Excel
- SQL (MySQL / SQL Server)
- Python
- Power BI
- Tableau
- Google Sheets

-
- ✓ **Total Projects: 5–7**
 - ✓ **Capstone Project: 1**
 - ✓ **Total Duration: 6 Months**

