TECHNOCATION FREELANCING TRAINING INSTITUTE & SOFTWARE HOUSE

Professional Data Analytics Course Outline

Module 1: Introduction to Data Analytics

- What is Data Analytics?
- Difference Between Data Analytics, Data Science & Business Intelligence
- The Data Analytics Lifecycle
- Real-World Applications of Data Analytics

Module 2: Data Collection & Cleaning

- Data Collection Methods (APIs, Databases, Web Scraping, Surveys)
- Importing Data from Different Sources (CSV, Excel, SQL, JSON)
- Data Cleaning & Preprocessing (Handling Missing Data, Removing Duplicates)
- Data Quality & Integrity Checks

Module 3: Exploratory Data Analysis (EDA)

- Understanding Data Distributions
- Summary Statistics (Mean, Median, Mode, Variance, Standard Deviation)
- Detecting & Handling Outliers
- Data Visualization Techniques (Histograms, Box Plots, Scatter Plots)

Module 4: Data Manipulation & Transformation

- Data Sorting, Filtering, and Aggregation
- Working with Dates & Time-Series Data

- Data Merging & Joins (SQL, Pandas)
- Creating New Variables & Feature Engineering

Module 5: SQL for Data Analytics

- Basics of SQL (SELECT, WHERE, ORDER BY, GROUP BY)
- Advanced Queries (Joins, Subqueries, Window Functions)
- Data Aggregation & Summarization
- Using SQL for Business Intelligence & Reporting

Module 6: Data Visualization & Reporting

- Creating Charts & Graphs in Excel & Google Sheets
- Building Dashboards in Power BI & Tableau
- Advanced Visualizations in Python (Matplotlib, Seaborn)
- Best Practices for Data Storytelling & Presentation

Module 7: Statistical Analysis & Data Insights

- Probability Distributions & Sampling Techniques
- Hypothesis Testing (T-Test, ANOVA, Chi-Square)
- Correlation & Regression Analysis
- A/B Testing for Business Decision Making

Module 8: Predictive Analytics & Machine Learning Basics

- Introduction to Machine Learning for Analytics
- Supervised vs. Unsupervised Learning
- Building Regression & Classification Models (Using Scikit-Learn)
- Evaluating Model Performance

Module 9: Big Data & Cloud Analytics

- Introduction to Big Data Technologies (Hadoop, Spark)

- Cloud-Based Data Analytics (Google BigQuery, AWS, Azure)
- Data Warehousing & ETL Processes
- Automating Data Pipelines

Final Module: Capstone Project & Certification

- Hands-on Data Analytics Project (Finance, Marketing, Healthcare, Retail)
- Data Interpretation & Business Insights
- Developing a Data Analytics Portfolio
- Course Completion Certification