TECHNOCATION FREELANCING TRAINING INSTITUTE & SOFTWARE HOUSE

DATA ENGINEER CERTIFICATION COURSE OUTLINE

Module 1: Introduction to Data Engineering

- First, understand what data engineering means.
- Next, learn role of a data engineer.
- Then, explore real-world data systems.
- Finally, see how data supports decisions.

Module 2: Basics of Data Types

- First, learn structured and unstructured data.
- Next, identify text, numbers, and images.
- Then, understand data formats like CSV, JSON.
- Finally, practice simple data examples.

Module 3: Databases Introduction

- First, understand what a database is.
- Next, explore tables, rows, and columns.
- Then, learn SQL basics for queries.
- Finally, create simple database tables.

Module 4: Data Collection Methods

- First, collect data from APIs and files.
- Next, gather data from websites or apps.
- Then, clean raw data carefully.
- Finally, store data in proper format.

Module 5: Data Cleaning & Processing

- First, remove duplicate or wrong data.

- Next, fix missing values properly.
- Then, format data into usable form.
- Finally, prepare clean datasets for use.

Module 6: Data Pipelines Basics

- First, understand what a data pipeline does.
- Next, move data from source to storage.
- Then, automate steps using simple tools.
- Finally, monitor pipeline performance regularly.

Module 7: Working with Big Data

- First, understand concept of big data.
- Next, explore tools like Hadoop and Spark.
- Then, process large datasets efficiently.
- Finally, store data in distributed systems.

Module 8: Cloud Data Engineering

- First, learn basics of cloud platforms.
- Next, use tools like AWS or Google Cloud.
- Then, store data in cloud storage.
- Finally, manage data services online.

Module 9: Data Warehousing

- First, understand what a data warehouse is.
- Next, store structured data for analysis.
- Then, learn ETL process basics.
- Finally, organize data for reporting use.

Module 10: Data Security & Governance

- First, protect data with strong security rules.
- Next, manage user access carefully.
- Then, follow data privacy guidelines.
- Finally, maintain data quality standards.

Module 11: Data Visualization Basics

- First, convert data into simple charts.
- Next, use tools like Power BI or Tableau.
- Then, create clear dashboards for users.
- Finally, explain insights using visuals.

Module 12: Certification & Final Project

- First, review all modules carefully again.
- Next, complete a small data project.
- Then, submit project for evaluation.
- Finally, earn your Data Engineer Certificate.