

## **TMY-DS03: Data Wrangling & Exploratory Data Analysis with Python**

Course Code: TMY-DS03

Duration: 4 days

Instructor-led Training (ILT) | Virtual Instructor-led Training (VILT)

### **OVERVIEW**

#### ***Data Wrangling & Exploratory Data Analysis with Python***

Data wrangling and exploratory data analysis (EDA) are essential steps in any data science or analysis project. This four-day course is designed for beginners and provides a comprehensive foundation in data preparation and exploration using Python. Participants will learn to clean, transform, and gain insights from real-world datasets, making them well-equipped for data-driven decision-making.

### **SKILLS COVERED**

By the end of this course, participants will:

- Understand the importance of data wrangling and EDA in the data science process.
- Be proficient in using Python libraries such as Pandas and Matplotlib for data manipulation and visualization.
- Have practical experience in cleaning, transforming, and preprocessing data.
- Be able to generate meaningful insights from data through exploratory data analysis.
- Develop the skills to communicate data-driven findings effectively.
- Feel confident to apply data wrangling and EDA techniques to real world projects.

### **WHO SHOULD ATTEND?**

- Beginner level courses for aspiring Data Scientist.
- Anyone who is interested in data science.

### **PREREQUISITES**

There are no prerequisites required to attend this course.

### **MODULES**

#### **Module 1: Introduction to Data Wrangling with Python**

- Importance of data wrangling and EDA in data science.
- Introduction to Python libraries for data manipulation: Pandas.
- Reading and loading data into Pandas DataFrames.
- Cleaning and handling missing data.
- Data transformation and feature engineering.
- Practical exercises with real-world datasets.

#### **Module 2: Advanced Data Wrangling Techniques**

- Merging, concatenating, and reshaping data.
- Grouping and aggregation with Pandas.
- Advanced data transformation with Pandas.
- Introduction to data visualization with Matplotlib.
- Creating basic charts and graphs.
- Hands-on exercises in data wrangling and visualization

**Module 3: Exploratory Data Analysis (EDA)  
with Python**

- Understanding the principles of EDA.
- Visualizing data distributions and summary statistics.
- Identifying outliers and anomalies.
- Analyzing relationships between variables.
- Creating interactive visualizations with Seaborn.
- EDA on real-world datasets.

**Module 4: Communicating Data Insights and  
Course Wrap-Up**

- Effective data storytelling and visualization.
- Building data narratives and dashboards.
- Presenting EDA findings.
- Course recap and Q&A.
- Feedback and next steps in the data science journey.
- Closing remarks and certificate distribution.

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