

# Data Analytics with Excel and Tableau

Course Description: This course is designed to provide you with a solid foundation of data analytics skills using Microsoft Excel and Tableau. You will learn how to work with large data sets, transform and clean data, perform data analysis using statistical techniques, and present insights using visualizations.

## Excel Course Outline;

### 1. Introduction to Data Analytics with Excel

- Overview of data analytics
- Importance of Excel in data analysis
- Setting up Excel for data analytics

### 2. Data Cleaning and Preparation

- Understanding data types
- Importing and exporting data
- Data cleaning techniques (removing duplicates, handling missing values, etc.)
- Data Cleaning Functions; CLEAN, TRIM, SUBSTITUTE, AND VALUE
- Data transformation and formatting

### 3. Exploratory Data Analysis (EDA)

- Data summarization techniques

- Data visualization basics (charts, graphs, histograms)

#### 4. Data Manipulation & Modeling with Excel Functions

- Introduction to Excel functions (SUM, AVERAGE, COUNT, etc.)
- Cell Referencing
- Named Ranges
- Structured Referencing
- Advanced functions for data manipulation (VLOOKUP, INDEX-MATCH, IF statements, etc.)
- Text functions (CONCATENATE, LEFT, RIGHT, etc.)

#### 5. Basic Analytics Techniques

- PivotTables and PivotCharts
- Filtering and sorting data
- Conditional formatting

#### 6. Advanced Analytics Techniques

- Data forecasting techniques
- Advanced Excel functions for analytics (SUMPRODUCT, SUMIFS, etc.)

#### 7. Data Visualization

- Creating interactive dashboards
- Customizing charts and graphs

## 8. Case Studies and Real-World Applications

- Analyzing real-world datasets
- Solving business problems with data analytics
- Presenting findings and insights

## 9. Project Work

- Hands-on project to apply learned concepts
- Analyzing a given dataset and presenting insights
- Peer review and feedback

# **Tableau Course Outline;**

## 1. Introduction to Tableau

- Overview of Tableau and its features
- Understanding the Tableau workspace
- Installing and setting up Tableau Desktop

## 2. Connecting to Data Sources

- Importing data from Excel, CSV, SQL Server, and other sources
- Connecting to cloud-based data sources (Google Analytics, Salesforce, etc.)

## 3. Data Preparation and Data Modeling

- Data modeling concepts (joins, blends, unions)
- Creating calculated fields and parameters

#### 4. Data Visualization Basics

- Introduction to data visualization principles
- Building basic visualizations (bar charts, line charts, scatter plots, etc.)
- customizing visualizations (colors, labels, tooltips)

#### 5. Calculations and Expressions

- Introduction to Tableau calculations
- Writing basic calculations (arithmetic operations, logical functions, etc.)
- Advanced calculations using Tableau functions (IF statements, LOD expressions, etc.)
- Using table calculations for dynamic analysis

#### 6. Dashboard Design Principles

- Designing interactive dashboards
- Layout options and best practices
- Creating dashboard actions (filter actions, highlight actions, etc.)
- Adding interactivity with parameters

#### 7. Advanced Analytics with Tableau

- Forecasting

- Clustering and predictive analytics
- Implementing statistical techniques (trend lines, box plots, etc.)

#### 8. Case Studies and Real-World Applications

- Analyzing real-world datasets using Tableau
- Solving business problems with data analytics
- Presenting findings and insights

#### 9. Project Work

- Hands-on project to apply learned concepts
- Analyzing a given dataset and creating interactive dashboards
- Peer review and feedback