Data Analytics and Statistical Modeling for Business Insights

Duration: 05 days

Chapter 01: Introduction to Python

- Introduction to Google Colaboratory
- Introduction to Python

Chapter 02: Pandas

- Introduction to Pandas
- Understanding Data Frame
- View and Select Data Demo
- Missing Values
- Data Operations
- File Read and Write Support
- Pandas SQL Operation

Chapter 03: Matplotlib

- Plotting Histogram
- Bar Chart
- Pie Chart
- Subplot

Chapter 04: Seaborn

- Numerical Data Plotting
- Line Plot
- Categorical Data Plotting
- Regression Plots

Module 05: Probability

- Data types and its measures
- Random Variables, its application with variables
- Probability-Application with examples
- Probability distribution with examples
- Sampling Funnel- Why and How

Module 06: Statistics

- What is statistics?
- Basic terminologies in statistics
- Types of statistics
- Descriptive statistics
- Measure of central tendency (mean, median, mode)
- Measures of dispersion (variance, standard deviation, range – its derivation)
- Inferential statistics

Module 07: Data Preparation

- What is Data Pre-Processing?
- Handling Missing data
- Handling Categorical data
- Data cleaning techniques
- Outliers

Module 08: Exploratory Data Analysis

- Introduction
- 2D Scatter-plot
- 3D Scatter-plot
- Univariate, Bivariate and Multivariate
- Histogram
- Box-plot
- Variance, Standard Deviation

Module 09: Overview of Microsoft Excel & IBM SPSS tool

- Data Import and Cleaning
- Basic Excel Functions for Data Analysis
- Data Visualization with Excel Charts
- Advanced Excel Functions (e.g., PivotTables)
- Hypothesis Testing and T-Tests
- Linear Regression Analysis
- Excel's What-If Analysis and Solver
- Hands-on Statistical Analysis
- Overview of IBM SPSS tool