Data Science with Python

Course Duration: 40 Hrs

Course Overview

This 40-hour *Data Science with Python* course provides a beginner-friendly approach to learning Python, data analysis, data visualization, and essential machine learning concepts. The course emphasizes hands-on learning through real-world datasets and projects, making it easy for beginners to understand how to analyze data, extract insights, and build predictive models using Python.

What you'll learn?

- Python programming essentials for data science
- Data manipulation and visualization using Pandas, NumPy, Matplotlib, and Seaborn
- Exploratory Data Analysis (EDA) and feature engineering
- Machine learning fundamentals (supervised and unsupervised learning)
- Model evaluation techniques and basic deployment

Target Audience

- Beginners in programming or data science
- Analysts, engineers, and students who want to start a career in data science
- Professionals from non-technical backgrounds looking to understand data-driven decision-making

Phone: +91-999-911-1686 **Mail Us:** info@ssdntech.com

Pre-Requisites

- Basic understanding of mathematics (algebra, statistics, probability)
- No prior programming knowledge required (Python basics will be covered)

Course content

1. Python for Data Science

- Python basics: Variables, loops, functions, and conditional statements
- Data structures: Lists, tuples, dictionaries, and sets
- File handling: Reading and writing CSV, JSON files
- NumPy for numerical computations
- Pandas for data manipulation (dataframes, filtering, grouping, merging)

2. Data Visualization

- Introduction to Matplotlib: Line plots, bar charts, scatter plots
- Seaborn for advanced visualization (heatmaps, box plots, pair plots)
- Plotly for interactive data visualization
- Understanding data distributions and correlations through graphs

3. Exploratory Data Analysis (EDA) and Data Preprocessing

- Understanding datasets: Summary statistics and missing values
- Data cleaning: Handling missing, duplicate, and inconsistent data
- Feature engineering: Creating new features, encoding categorical data
- Scaling and normalization techniques

4. Introduction to Machine Learning

- What is Machine Learning? Overview and real-world applications
- Supervised Learning:
  - Regression models (Linear Regression, Logistic Regression)
  - Classification models (Decision Trees, Random Forest, KNN)
- Unsupervised Learning:
  - Clustering (K-Means, Hierarchical Clustering)
- Model evaluation techniques: Train-test split, cross-validation, confusion matrix

5. Practical Applications and Hands-on Projects

- Data collection and preprocessing
- Applying machine learning models
- Evaluating and improving model performance
- Interpreting results and visualizing insights

Phone: +91-999-911-1686 **Mail Us:** info@ssdntech.com