

# LEARNING DATA SCIENCE

## COURSE OVERVIEW

Learning Data Science course is designed to provide participants with a comprehensive understanding of the foundational concepts, techniques, and tools used in the field of data science. This course is tailored for individuals seeking a career transition to become data scientists, equipping them with the essential skills to analyze, interpret, and draw meaningful insights from data. Through a combination of theoretical knowledge and hands-on practical exercises, participants will develop a strong foundation to embark on a successful journey in the data science field.

## TARGET COMPETENCIES

- Data Preprocessing Skills
- Exploratory Data Analysis
- Python Programming Basics
- Library Data Visualization
- Machine Learning Fundamentals
- Model Evaluation Expertise

## TARGET AUDIENCE

This course is ideal for professionals from non-technical backgrounds who aspire to transition into data science roles. Individuals with a curiosity for data analysis and its applications. Career changers interested in leveraging data for decision-making.

## COURSE OBJECTIVES

By completely attending this course, participants will be able to:

- Understand the core principles and methodologies of data science.
- Manipulate, clean, and preprocess various types of data for analysis.
- Apply statistical techniques to extract insights and patterns from data.
- Utilize popular programming languages and tools for data analysis, such as Python and Jupyter.
- Develop data visualizations to effectively communicate findings.
- Implement machine learning algorithms for predictive and classification tasks.
- Evaluate and interpret the results of data analysis and machine learning models.

To register or for complete course information

Office: +971 4 430 8394 | WhatsApp: +971 50 454 9895 | Email: [courses@viftraining.com](mailto:courses@viftraining.com)

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# **COURSE METHODOLOGY**

The course will be delivered through a combination of Interactive Lectures: In-depth theoretical explanations of data science concepts and methodologies. Hands-on Labs: Practical exercises using real-world datasets to apply the learned concepts. Group Discussions: Collaborative sessions to encourage knowledge sharing and problem-solving. Case Studies: Analysis of real-life data science scenarios to bridge theory and practice. Quizzes and Assessments: Regular evaluations to gauge participant progress.

## **COURSE OUTLINE**

### **INTRODUCTION TO DATA SCIENCE**

- Understanding the data science lifecycle.
- Role and responsibilities of a data scientist.
- Overview of data-driven decision-making.

### **DATA ACQUISITION AND PREPROCESSING**

- Sources of data and data collection methods.
- Data cleaning, transformation, and feature engineering.

### **EXPLORATORY DATA ANALYSIS (EDA)**

- Descriptive statistics and data summarization.
- Data visualization techniques

### **INTRODUCTION TO PROGRAMMING WITH PYTHON**

- Basics of Python programming.
- Data structures, control flow, and functions

### **DATA VISUALIZATION**

- Creating static and interactive visualizations using Matplotlib and Seaborn.
- Best practices in data visualization

### **INTRODUCTION TO MACHINE LEARNING**

- Fundamentals of machine learning.
- Supervised vs. unsupervised learning.

### **MACHINE LEARNING ALGORITHMS**

- Linear and logistic regression.
- Decision trees and random forests.
- Model training, validation, and evaluation.

### **CASE STUDIES AND APPLICATIONS**

- Applying data science techniques to real-world problems.
- Presenting findings and insights.

### **ETHICAL CONSIDERATIONS IN DATA SCIENCE**

- Data privacy and security.
- Bias and fairness in machine learning.

### **CAPSTONE PROJECT**

- Hands-on project applying data science concepts to a real dataset.
- Presentation of project results.

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