**STUDY MATERIAL FOR DATA SCIENCE**

**Introduction to Data Science:** The fundamentals of data science include types of datasets and standard techniques for exploring data.

**Programming Language:** Python and R are essential data science programming languages. An overview of their syntax, basic commands, and how to use them in data analysis projects is included.

**Statistical Foundations for Data Science:** Explores basic concepts of statistics and probability to develop an understanding of how to apply them for data analysis projects.

**Exploratory Data Analysis:** Fundamentals of data exploration and analysis. It covers different techniques for cleaning and preprocessing data and methods for identifying patterns and correlations in datasets.

**Data Mining:** Introduces the principles of data mining and covers a range of techniques used for extracting patterns from large datasets. It also focuses on developing data analysis strategies, clustering, and reducing dimensionality.

**Machine Learning Techniques & AI:** Understand the fundamentals of Artificial Intelligence (AI), machine learning (ML), and deep learning (DL), and how to use them for solving real-world problems.

**Data Modeling, Selection, and Evaluation:** Learn to select the right data model and evaluate its performance. It includes understanding metrics such as accuracy, precision, and recall, as well as techniques for selecting the most appropriate model based on a given problem.

**Data Visualization and Reporting:** Various techniques and tools can be used to visualize data effectively. You will gain insights into visualizing data using R packages, Tableau, and Power BI.

**Business Intelligence tools:** Different methods of collecting and managing data to gain meaningful insights. Topics include setting up a data warehouse, integrating multiple data sources, and developing reports with drill-down capabilities.