€TRAINING

Certificate in Data Science (CDS)

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Introduction:

Welcome to the Certificate in Data Science CDS course! This comprehensive 5-day program is designed to provide participants with a solid foundation in data science concepts and techniques. Whether you are new to the field or seeking to enhance your existing skills, this course will equip you with the knowledge and tools necessary to extract valuable insights from data and make data-driven decisions.

Course Objectives:

At the end of this course, Participants will be able to:

- Understand the fundamental principles of data science and its applications across various industries.

- Learn to use programming languages and tools commonly employed in data analysis, such as Python and R.

- Explore data manipulation, cleaning, and visualization techniques to gain insights from raw data.

- Develop a strong understanding of statistical methods and their application in data analysis.

- Learn how to build and interpret machine learning models for predictive and prescriptive analytics.

- Gain hands-on experience with popular data science libraries and frameworks.

- Work on real-world data science projects to apply the acquired knowledge in practical scenarios.

- Learn about ethical considerations and best practices in data science.

Targeted Audience:

- Aspiring data scientists and analysts seeking a foundational understanding of data science concepts and techniques.

- Business analysts looking to leverage data for making informed decisions.

- IT professionals interested in transitioning to data science roles.

- Researchers and academics exploring data-driven approaches in their respective fields.

- Anyone with a keen interest in data science and its practical applications.

Course Outlines:

Unit 1: Introduction to Data Science

- Understanding the data science landscape and its significance.

- Introduction to data types, data sources, and data acquisition.

- Overview of popular programming languages in data science Python, R, etc..

- Setting up the data science environment with essential tools.

Unit 2: Data Exploration and Visualization

- Data cleaning and preprocessing techniques.

- Exploratory Data Analysis EDA using statistical and visual methods.

- Data visualization best practices with libraries like Matplotlib and Seaborn.

Unit 3: Statistical Analysis for Data Science

- Key concepts of probability and statistics for data analysis.

- Hypothesis testing and statistical inference.

- Understanding correlation, regression, and other statistical modeling techniques.

Unit 4: Introduction to Machine Learning

- Fundamentals of machine learning and its applications.

- Supervised vs. unsupervised learning.

- Building and evaluating machine learning models.

Unit 5: Advanced Topics in Data Science

- Introduction to deep learning and neural networks.

- Big data concepts and tools e.g., Hadoop, Spark.

- Data ethics and privacy considerations in data science projects.