DATA SCIENCE MASTER PROGRAM

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Course Introduction and Overview

Sprintzeal's Data Science Master Program

As a leader in professional training and certification, **Sprintzeal** is dedicated to empowering individuals with the skills and knowledge needed to excel in the dynamic field of data science. With a track record of delivering high-quality training across various domains, we are excited to guide you through this transformative master program.

Course Introduction and Overview

- Welcome and Program Introduction
- Meet the Expert Instructors
- Understanding the Program Structure
- Learning Objectives and Outcomes

Program Introduction and Expert Instructors

Our **64-hour** **Data Science program** is designed to provide a holistic understanding of data science concepts, tools, and techniques. Led by expert instructors who are seasoned professionals in the data science industry, you'll be guided through each module with practical insights, real-world experiences, and hands-on expertise.

Day 1: Introduction to Data Science

Hour 1-2: Introduction to Data Science and its Importance

- What is data science?
- Fields where data science is applied

Hour 2-3: Tools and Technologies in Data Science

- Introduction to Python
- Jupyter notebooks

Hour 3-4: Data Types and Data Structures in Python

Hour 4-7: Introduction to Lists

- List Functions
- Slicing & Dicing - Examples
- List Comprehensions

Hour 7-8: Introduction to Dictionary

- Dictionary Functions/Techniques
- Dictionary Comprehensions

Day 2: Data Structures & Data Manipulation

Hour 1-3: Sets & Tuples

Hour 3-5: Understanding for loop & while loop in Python

- Variables, Loops, and Conditional Statements

Hour 5-7: Intro to Numpy

- Array Creation
- Matrices Operations
- Numpy Functions/Techniques

Hour 7-8: Introduction to Pandas

- Series and DataFrames

Day 3: Data Manipulation with Pandas

Hour 1-2: Introduction to Pandas

- Series and DataFrames

Hour 2-3: Importing and Exporting Data

Hour 3-4: Data Cleaning

- Handling missing values, duplicate data

Hour 4-5: Advanced Data Manipulation

- Aggregations, Grouping, Pivoting

Hour 5-7: Hands-on exercises with real datasets

Hour 7-8: Intro to Matplotlib & Seaborn

Day 4: Exploratory Data Analysis (EDA)

Hour 1-2: Importance of EDA

- Descriptive statistics

Hour 2-3: Univariate Analysis

- Distributions, Box plots

Hour 3-4: Bivariate Analysis

- Correlations, Cross-tabulations

Hour 3-4: Hands-on EDA with real datasets

Hour 4-5: Data Transformation

- Binning, Encoding, Scaling

Hour 5-6: Handling Text Data

- String operations, Regular expressions

Hour 6-8: Introduction & Descriptive Statistics

- Overview of Statistics
- Central Tendency: Mean, Median, Mode
- Dispersion: Variance, Standard Deviation

Day 5: Statistics & Advanced Statistical Techniques

Hour 1-3: Basics of Inferential Statistics

Population vs. Sample

Point Estimation & Confidence Intervals

Introduction to Hypothesis Testing

Hour 3-5: T-tests

One-Sample T-test

Independent Two-Sample T-test

Paired Sample T-test

Hour 5-6: Analysis of Variance (ANOVA)

One-Way ANOVA Basics

Assumptions and Interpretation

Hour 6-8: Chi-Square Tests

Test for Independence

Test for Goodness of Fit

Day 6: Statistics & Advanced Statistical Techniques

Hour 1-3: Basics of Inferential Statistics

- Population vs. Sample
- Point Estimation & Confidence Intervals
- Introduction to Hypothesis Testing

Hour 3-5: T-tests

- One-Sample T-test
- Independent Two-Sample T-test
- Paired Sample T-test

Hour 5-6: Analysis of Variance (ANOVA)

- One-Way ANOVA Basics
- Assumptions and Interpretation
- Hour 6-8: Chi-Square Tests
- Test for Independence
- Test for Goodness of Fit

Day 7: Introduction to Machine Learning

Hour 1-2: What is Machine Learning?

- Supervised vs Unsupervised Learning

Hour 2-3: Linear Regression

Hour 3-4: Classification algorithms: Logistic Regression, KNN, Naive Bayes

Hour 5-8: Hands-on ML exercises with Scikit-learn

Day 8: SQL for Data Science

Hour 1-2: Introduction to SQL and Databases

- **Basic SQL operations: SELECT, WHERE, ORDER BY**

Hour 2-3: Joins and Aggregations in SQL

Hour 3-4: Subqueries and Complex SQL Operations

Hour 4-7: Hands-on SQL exercises & concepts

Hour 7-8: Q&A Conclusion & Feedback

Tools Covered in Data Science Master Program

1. SQL (Structured Query Language)
2. Ubuntu (Linux distribution)
3. NumPy
4. Pandas
5. Matplotlib
6. Seaborn
7. Jupyter Notebooks
8. Hadoop
9. HDFS (Hadoop Distributed File System)
10. Hive
11. Python programming language
12. scikit-learn (sklearn)
13. R programming language
14. dplyr
15. ggplot2

These tools will be central to implementing the concepts and techniques covered in your Data Science Master Program. Students will use these tools to perform data analysis, machine learning modeling, and visualization throughout the course.

Advancing Your Data Science Career

Beyond technical skills, this program offers invaluable career guidance and job readiness sessions. From resume building to interview preparation, you'll gain the insights needed to confidently step into the data science job market. Expert led sessions, collaborative learning, and networking opportunities will expose you to diverse perspectives and industry connections, enhancing your learning experience.

For Queries – support@sprintzeal.com

For complete course information – Data Science Master Program

********** Thank You **********