



**UP System Information Technology Foundation, Inc.**

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**Course Title:** INTRODUCTION TO DATA SCIENCE

**Course Prerequisites:** None

**Duration:** Five (5) Days

**Class Schedule:** 9:00am to 4:00pm

**Total Hours:** 20 Hours

**Course Description:** Data Science is a dynamic and fast-growing field that integrates Mathematics, Statistics, and Computer Science. It aims to process data to discover hidden patterns and trends and eventually new knowledge to help us understand our world better and to enable us to make better decisions. Data Science employs the use of various tools to be able to do predictions, detect fraud, make recommendations, do modelling, image processing, among others.

**Course Objectives:** At the end of the course, the participant is expected to understand the fundamental concepts in Data Science and be able to use various tools to perform the following:

1. Do Data Preprocessing and Exploratory Data Analysis
2. Apply machine learning techniques for classification, regression, and clustering, and association rule mining
3. Communicate insights through effective visualization of given data

All these will be implemented in R and/or Python

**Course Contents:**

1. Introduction to Data Science Process
2. A Review of Databases
3. Overview of Data Warehousing
4. Data Preprocessing, Data Cleaning and Integration
5. Exploratory Data Analysis
6. Machine Learning: Regression, Classification, Clustering, Association Rule Mining
7. Dimensionality Reduction
8. Introduction to Deep Learning

