Application of Mathematics in Data Science:

Module 1 (20 hours):

1. Various Research Methods
    a. Introduction to Several Statistical Study Materials
    b. Learn the positives and negatives of each
2. Visualizing Data
    a. Take your data and display it to the world
    b. Create the interpret histograms, bar charts, and frequency plots
3. Central Tendency
    a. Create and Interpret the 3 measures of center for distributions: the mean, median, and mode
4. Variability
    a. Quantify the spread of data using the range and standard deviation
    b. Identify outliers in data sets using th concept of the interquartile range
5. Standardizing
    a. Convert distributions into the standard normal distribution using the Z-Score
    b. Compute proportions using standardized distributions
6. Normal Distribution
    a. Use normalized distributions to compute probabilities
    b. Use the Z-table to look up the proportions of observations above, below, or in between values
7. Sampling Distributions
    a. Apply the concepts of probability and normalization to sample data sets.

Data Visualization and EDA:

Module 1: Fundamentals of Data Visualization (20 hours):

1. Introduction to EDA
2. Data Analysis vs EDA
3. Understanding the Data
4. Univariate Analysis
5. Bivariate Analysis
6. Multi Collinearity
7. Missing Values Treatment
8. Outliers Treatment
9. Working on Imbalanced Dataset
10. Case Study