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Learning for Life

Week 3: Advanced Statistics (Total video duration= 2 hours. You will be required to spend 30 minutes/day along with practicing datasets and quizzes)

Mentor Session Duration: 2 hours

Faculty Name: Dr. Abhinanda Sarkar

Number of videos: 5

Learning Outcomes from the Module:

After learning from this module, learners will be able to understand:

▶ Basic Concept of ANOVA - One Way and Two Way ANOVA

▶ Concept of EDA

▶ Univariate and Multi-Variate Analysis

▶ Dealing with Missing Values and Outliers

▶ Concept of Principal Component Analysis

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Mentor Session Duration: 2 hours	Faculty Name: Dr. Abhinanda Sarkar	No. of videos: 5

Video No.	Video Name	Duration of the video	Topics Covered	Conceptual or Hands On
1	Concept of Principal Component Analysis	16:01	● **Main idea of PCA with the help of an example**	**Conceptual**
2	Mechanics of Principal Component Analysis	12:05	● **Steps involved in PCA** ● **Performance Issues in PCA** ● **Signal to Noise Ratio Model**	**Conceptual**
3	Principal Component Covariance Matrix	12:26	● **Concept of Covariance Matrix and its importance in PCA**	**Conceptual**
4	Hands On Exercise in Python – 1	20:07	● **Hands On to understand the practical application of PCA**	**Hands On**
5	Hands On Exercise in Python -2	25:15	● **Hands On to understand the practical application of PCA**	**Hands On**

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Few textbooks
that you can refer to:

1

IT Jolliffe

Principal Component Analysis

2

Shankar Sastry

Generalised Principal Component Analysis

3

George Dunteman

Principal Component Analysis