

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





Mentor Session Duration:Faculty Name:No. of videos:2 hoursDr. Abhinanda Sarkar5

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	<ul> <li>Steps involved in PCA</li> <li>Performance Issues in PCA</li> <li>Signal to Noise Ratio Model</li> </ul>	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 thepractical application of PCA	Hands On
5	Hands On Exercise in Python -2	25:15	Hands On to understand thepractical application of PCA	Hands On



## 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** 

