

1. Text Books: 1. Jake VanderPlas - Python Data Science Handbook: Essential Tools for Working with Data, Oreilly 2nd Edition, 2022.	
List of Reference books	
1. https://python4csip.com/files/download/Data%20Visualization.pdf	
Web links and Video Lectures (e-Resources)	
- Numpy Tutorial - https://www.w3schools.com/python/numpy/default.asp - Pandas Tutorial - https://www.w3schools.com/python/pandas/default.asp - Matplotlib Tutorial - https://www.w3schools.com/python/matplotlib_intro.asp - Introduction to ML with Scikit Learn - https://scikit-learn.org/1.4/tutorial/basic/tutorial.html	
Activity Based Learning (Suggested Activities in Class)/ Practical Based Learning	
- Programming Assignment-1: Implementation of important concepts of data manipulation using NumPy and Pandas (Python) - 10 Marks - Programming Assignment-2: Implementation of simple Machine Learning models with Visualization using Python (Matplotlib, Scikitlearn) - 15 Marks	
Course Outcomes	CO1: Demonstrate the application of the NumPy for performing data analysis tasks. CO2: Make use of Pandas for various data manipulation tasks. CO3: Apply advanced data manipulation techniques to real-world datasets. CO4: Develop data visualizations using Matplotlib and Seaborn to effectively communicate data insights. CO5.: Explain the fundamental concepts of machine learning and validation models using Scikit-Learn.
Internal Assessment Marks: For the Assignment component of the CIE, there are 25 marks and for the Internal Assessment Test component, there are 25 marks. For the course, CIE marks will be based on a scaled-down sum of two tests and other methods of assessment	

The Correlation of Course Outcomes (CO's) and Program Outcomes (PO's)

Subject Code	BDS613B	TITLE: Exploratory Data Analysis							Faculty Name	Dr Anitha D B			
List of Course Outcomes	Program Outcomes												Total
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	
CO-1	2	-	-	-	2	-	-	-	-	-	-	-	4
CO-2	2	2	2	-	2	-	-	-	-	-	-	-	8
CO-3	2	2	2	-	2	-	-	-	-	-	-	-	8
CO-4	2	2	2	-	2	-	-	-	-	-	-	-	8
CO-5	2	-	-	-	-	-	-	-	-	-	-	-	2
Total	10	06	06	-	08	-	-	-	-	-	-	-	30

Note: 3 = Strong Contribution, 2 = Average Contribution, 1 = Weak Contribution, - = No Contribution

The Correlation of Course Outcomes (CO's) and Program Specific Outcomes (PSO's)

Subject Code	BDS613B	TITLE: Exploratory Data Analysis		Faculty Name	Dr Anitha D B	
List of Course Outcomes	Program Specific Outcomes				Total	
	PSO-1	PSO-2	PSO-3			
CO-1	2	-	-		2	
CO-2	2	-	-		2	
CO-3	2	-	-		2	
CO-4	2	-	-		2	
CO-5	2	-	-		2	
Total	10	-	-		10	