Name of the college: Government College of Arts, Science and Commerce, Sanquelim Goa.

Name of Faculty: Pooja Bhanudas Naik	**Subject:** Computer Science

Paper code and Paper name: CSD-107:Introduction to Data Analytics	**Program/Course: TYBSc**	**Division:**

Academic year: 2024 – 2025	**Semester: VI**	**Total Lectures: 45**

Course Objectives:
1. Become familiar with methods of Data Science and their practical usefulness

Course Learning Outcome:

On completion of the course, students will be able to:

- Describe what Data Science is and the skill needed to be a data analyst.
- Explain in basic terms what statistical inference means. Identify probability distributions commonly used as foundations for statistical modeling. Fit a model to data.
- Use Python to carry out basic statistical modeling and analysis.

Month	Lectures From:	Lectures To:	No. of lectures allotted	Topic, Subtopic to be covered	Exercise/Assignment	ICT Tools	Reference books
December	16/12/2024	21/12/2024	2	Creating your own data set having atleast 5 attibutes and 50 rows. (rollno, name, marks in 5 subjects) use statistical techniques such as mean, median, mode and std Deviation.	Practice problems at home and during practicals.		
January	02/01/2025	04/01/2025	2	Data cleaning – (dropping irrelevant cols, renaming cols, dropping duplicate rows, dropping missing or null values, replace values).	Practice problems at home and during practicals.	Smart Board 2LCD Projector	Cathy O'Neil and Rachel Schutt.; "Doing Data Science, Straight Talk From The Frontline", O'Reilly, 2014.

January	06/01/2025	11/01/2025	2	Basic data analysis (head, tail, describe, dtypes, count, shape)	Practice problems at home and during practicals.	Smart Board LCD Projector	Cathy O'Neil and Rachel Schutt.; "Doing Data Science, Straight Talk From The Frontline", O'Reilly, 2014.
January	13/01/2025	18/01/2025	2	Basic data analysis (head, tail, describe, dtypes, count, shape)	Practice problems at home and during practicals.	Smart Board LCD Projector	Cathy O'Neil and Rachel Schutt.; "Doing Data Science, Straight Talk From The Frontline", O'Reilly, 2014.
January	20/01/2025	25/01/2025	2	Combining data from multiple sources(https://www.dataquest.io/blog/pandas-concatenation-tutorial/)	Practice problems at home and during practicals.	Smart Board LCD Projector	Cathy O'Neil and Rachel Schutt.; "Doing Data Science, Straight Talk From The Frontline", O'Reilly, 2014.
January	27/01/2025	01/02/2025	2	Combining data from multiple sources(https://www.dataquest.io/blog/pandas-concatenation-tutorial/)	Practice problems at home and during practicals.	Smart Board LCD Projector	Cathy O'Neil and Rachel Schutt.; "Doing Data Science, Straight Talk From The Frontline", O'Reilly, 2014.
February	03/02/2025	08/02/2025	2	Web scraping (refer to code provided)	Practice problems at home and during practicals.	Smart Board LCD Projector	Cathy O'Neil and Rachel Schutt.; "Doing Data Science, Straight Talk From The Frontline", O'Reilly, 2014.

Month	Start Date	End Date	Count	Topic	Practice	Equipment	Reference
February	10/02/2025	15/02/2025	2	Web scraping (refer to code provided)	Practice problems at home and during practicals.	Smart Board LCD Projector	Cathy O'Neil and Rachel Schutt.; "Doing Data Science, Straight Talk From The Frontline", O'Reilly, 2014.
February	17/02/2025	22/02/2025	2	Implementation of K-means algorithm	Practice problems at home and during practicals.	Smart Board LCD Projector	Cathy O'Neil and Rachel Schutt.; "Doing Data Science, Straight Talk From The Frontline", O'Reilly, 2014.
February	24/02/2025	01/03/2025	2	Implementation of K-means algorithm	Practice problems at home and during practicals.	Smart Board LCD Projector	Cathy O'Neil and Rachel Schutt.; "Doing Data Science, Straight Talk From The Frontline", O'Reilly, 2014.
March	03/03/2025	08/03/2025	2	Implementation of classification algorithm - decision tree	Practice problems at home and during practicals.	Smart Board LCD Projector	Cathy O'Neil and Rachel Schutt.; "Doing Data Science, Straight Talk From The Frontline", O'Reilly, 2014.
March	10/03/2025	15/03/2025	2	Implementation of classification algorithm - decision tree	Practice problems at home and during practicals.	Smart Board LCD Projector	Cathy O'Neil and Rachel Schutt.; "Doing Data Science, Straight Talk From The Frontline", O'Reilly, 2014.

March	17/03/2025	22/03/2025	2	Data visualization using box plot, scatter plot, heat maps, histogram	Practice problems at home and during practicals. 2	Smart Board LCD Projector	Cathy O'Neil and Rachel Schutt.; "Doing Data Science, Straight Talk From The Frontline", O'Reilly, 2014.
March	24/03/2025	29/03/2025	2	Data visualization using box plot, scatter plot, heat maps, histogram	Practice problems at home and during practicals.	Smart Board LCD Projector	Cathy O'Neil and Rachel Schutt.; "Doing Data Science, Straight Talk From The Frontline", O'Reilly, 2014.
March	31/03/2025	05/04/2025	2	Revision	Practice problems at home and during practicals.	Smart Board LCD Projector	Cathy O'Neil and Rachel Schutt.; "Doing Data Science, Straight Talk From The Frontline", O'Reilly, 2014.
April	07/04/2025	11/04/2025	2	Revision	Practice problems at home and during practicals.	Smart Board LCD Projector	Cathy O'Neil and Rachel chutt.; "Doing Data Science, Straight Talk From The Frontline", O'Reilly, 2014.

*Assessment Rubrics

Component	Max Marks
ISA 1	7.5
ISA 2	7.5
Practical	25
Project	-

Semester End Examination	60