

Name of the college: Government college of Arts Science and Commerce ,Sankhali

Name of Faculty: Ms. Nirmiti Shankar Naik

Subject: Statistical Methods Using R/SPSS/PSPP

Paper code: MAT - 142 (Theory)

Program/Course: FY B.Sc.

Division:

Academic year: 2024- 2025

Semester:II

Total Lectures: 15

Course Objectives:

To make students aware of various statistical methods that can be employed in data analysis, hypothesis testing and research.

Expected course Outcome:

On successfully completing the course a student will have knowledge about:

- 1. Calculate measures of central tendencies and dispersion along with graphical representations.**
- 2. Correlation and regression analysis.**
- 3. Solve problems in Probability theory.**
- 4. Understand testing of hypothesis.**
- 5. Demonstrate based on various statistical tests using statistical software.**

Student learning outcome: The student will be able to,

- 1. Solve problems on Probability theory and various theoretical Distributions.**
- 2. Understand testing of hypothesis and various other tests like large sample test, parametric tests etc.**

Month	Lectures From: To:		No. of lecture s allotted	Topic, Subtopic to be covered	Exercises/ assignment	ICT Tools	Reference books
December	9/12/2024	14/12/2024	1	Definition of Statistics; Measures of Central Tendency: Mean, Median,	Problem solving	chalkboard	
December	16/12/2024	21/12/2024	1 Liberat ion Day	Mode.Measures of Dispersion: Range, Quartile deviation, Mean deviation, Standard deviation, Coefficient of variation			
January	02/01/2025	04/01/2025	-	Nil	Problem solving	Chalkboard	
January	06/01/2024	11/01/2024	1	Graphical representation of various measures of location and dispersion: Bar Graphs, Histograms, Frequency polygons, Ogives, Pie Charts.	Problem solving	Chalkboard	1)S. C. Gupta: Fundamentals of Statistics, 7 th Edition, Himalaya Publishing House, 2018. 2) S.C. Gupta & V.K. Kapoor: Fundamentals Of Mathematical Statistics, 12th edition

January	13/01/2025	18/01/2025	1	Moments, Skewness and Kurtosis	Problem solving		S. C. Gupta: Fundamentals of Statistics, 7 th Edition, Himalaya Publishing House, 2018.
January	20/01/2025	25/01/2025	1	Correlation and Regression Analysis: Introduction; Karl Pearson's coefficient of Correlation; Spearman's Rank correlation; Bivariate Linear Regression Analysis.	Assignment Problem solving	Chalkboard	1)S.C. Gupta & V.K. Kapoor: Fundamentals Of Mathematical Statistics, 12th edition 2) S. C. Gupta: Fundamentals of Statistics, 7 th Edition, Himalaya Publishing House, 2018.
January - February	27/01/2024	01/02/2025	1	Introduction: Mathematical probability; Statistical Addition probability; theorem of Axiomatic probability.	Problem solving		S.C. Gupta & V.K. Kapoor: Fundamentals Of Mathematical Statistics, 12th edition
February	03/02/2025	08/02/2025	1	Multiplication theorem of probability; Pair wise and mutual independence; Total probability theorem; Bayes' theorem	Problem solving	Chalkboard	1)S. C. Gupta: Fundamentals of Statistics, 7 th Edition, Himalaya Publishing House, 2018.

							2) S.C. Gupta & V.K. Kapoor: Fundamentals Of Mathematical Statistics, 12th edition
February	10/02/2025	15/02/2025	1	Random variable; Probability distribution of a Discrete Random Variable	Problem solving	Chalkboard Smart board	1)S. C. Gupta: Fundamentals of Statistics, 7 th Edition, Himalaya Publishing House, 2018. 2) S.C. Gupta & V.K. Kapoor: Fundamentals Of Mathematical Statistics, 12th edition
February	17/02/2025	22/02/2025	1	Probability distribution of a Continuous Random Variable; Mathematical Expectations.	Problem solving	Chalkboard Smart board	1)S. C. Gupta: Fundamentals of Statistics, 7 th Edition, Himalaya Publishing House, 2018. 2) S.C. Gupta & V.K. Kapoor: Fundamentals Of Mathematical Statistics, 12th edition

February - March	24/02/2025	01/03/2025	1	Binomial distribution; Poisson Distribution; Normal Distribution.	Test Problem solving		S.C. Gupta & V.K. Kapoor: Fundamentals Of Mathematical Statistics, 12th edition
March	03/03/2025	08/03/2025	1	Interval Estimation; Testing of Hypothesis. Large sample tests: Sampling of Attributes; Sampling of Variables.	Problem solving	Smart board	S. C. Gupta: Fundamentals of Statistics, 7 th Edition, Himalaya Publishing House, 2018.
March	10/03/2025	15/03/2025 Holi	1	Parametric tests: Student's t distribution (Independent and Paired 't' test);	Problem solving	Smart board	S.C. Gupta & V.K. Kapoor: Fundamentals Of Mathematical Statistics, 12th edition
March	17/03/2025	22/03/2025	1	One Way and Two Way ANOVA.	Test Problem solving	Chalkboard	S. C. Gupta: Fundamentals of Statistics, 7 th Edition, Himalaya Publishing House, 2018.
March	24/03/2025	29/03/2025	1	Non-Parametric tests: Chi Square test	Problem solving	Smart board	S.C. Gupta & V.K. Kapoor: Fundamentals Of Mathematical Statistics, 12th edition

March - April	31/03/2025	05/04/2025 Gudi Padva, Id	-	Nil			
April	07/04/2025	11/04/2025	1	Mann-Whitney test; Kruskal Wallis test.	Problem solving	Chalkboard Smart board	

*** Assessment Rubrics**

Component	Max Marks
ISA 1	5
ISA 2	5
Project	-
Semester End Exam	20