Enclosure –XIA

Shree Manibhai Virani & Smt. Navalben Virani Science College, Rajkot
(Autonomous)
Affiliated to Saurashtra University, Rajkot.

FOR STUDENTS ADMITTED FROM A.Y. 2019-2020 & ONWARDS

Department: **All PG Departments** Programme: **M.Sc.**

Semester - I to IV		
Course Code	**Course Title**	**Course Credit**
19PICID201, 19PCHID201 19PBTID101, 19PMBID101 19PMTID201, 19PITID201	Discipline Specific Elective-ID- II: Statistical Methods.	2 Credits

Course Description:
This interdisciplinary course provides students with the opportunity to integrate the study of statistics with another quantitatively intensive discipline. Knowledge of statistical methods is becoming increasingly important in many disciplines, so that students completing this course will have many options available upon completion of their respective PG programme. Students completing this course will be well prepared to design experimental studies and analyze data, in both their emphasis field and other areas.

Course Purpose:
This is a Discipline Specific Elective interdisciplinary course for the students of all PG programmes with a focus on Statistical Methods. Purpose of this course is to provide students with opportunity to develop technical skills in statistical analysis for the practical application of statistical methods in their current field of study and for future application.

Course Outcomes: After completion of this course, the students will be able to

CO No.	**CO Statement**	**Blooms taxonomy Level (K_1 to K_6)**
CO_1	Understand the concept of statistical parameters.	K1, K2
CO_2	Understand sampling and sampling distributions also measures of dispersion.	K1, K2
CO_3	Apply the techniques of correlation, regression, and Random Variables	K3
CO_4	Remember, understand and apply the analytical techniques of statistics.	K1, K2, K3
CO_5	Test the hypotheses using various techniques and interpret the result.	K5

Course Content	Hours
Module-I : Statistics- Definition and scope	5hrs
• Introduction and scope of statistics. • Meaning of sample and population. • Data analysis-classifications and tabulations. • Graphical representations and its interpretations.	
Module-II : Measures of Central Tendency	5hrs
• Introduction, need and scope. • Definition, types and situations. • Interpretation of data.	
Module-III :Measures of Dispersion	5hrs
• Meaning and definitions- standard deviation and variance. • Skewness: Measure of Skewness, Karl Pearson's Coefficient of Skewness • Kurtosis: Measure of Kurtosis	
Module-IV : Correlation and Regression	6hrs
• Definition and types of correlation. • Concepts of coefficient of correlation and regression coefficient. • Analysis and interpretation of data for correlation, regression and lines of regression.	
Module-V : Probability Distribution& statistical inferences	6hrs
• Meaning of random variables and probability distribution • Types of discrete probability distribution. • Introduction to statistical inference and its requisite conditions • Concepts of student's t-test, F-test (ANOVA) • Case study and its analysis with interpretations.	

Suggested laboratory experiments:

Pedagogic tools:
• Chalk and Board • Power point presentations • Video Lecture • Peer Learning

Text books
• S P Gupta, "Statistical Methods", 30th edition S Chand. • S.C. Gupta and V. K. Kapoor, Fundamentals of Mathematical Statistics (11th Edition), Sultan
Laboratory Manual/ Book
•

Suggested reading / E-resources
• Anderson, Sweeney, Williams, "Statistics for business and economics", 9th edition, Thomson

Publication.

- Johnson Richard A., Miller and Freund's - Probability and Statistics (8^{th} Edition), PHI.
- https://swayam.gov.in/course/1394-probability-and-statistics

Suggested MOOCs

- https://swayam.gov.in/course/175-foundations-of-mathematical-statistics

Methods of assessing the Course Outcomes

The COs of the course will be assessed through

- Class room test
- Result interpretation