St. Xavier's College (Autonomous), Ahmedabad
Syllabus of Semester – II of the following departments under Faculty of Science based on Under Graduate Curriculum Framework – 2023 (NEP) to be implemented from the Academic Year 2023-24.

FACULTY OF SCIENCE

DEPARTMENT OF STATISTICS

Course	Title	Content	Hours/Week	Credit
Minor-I (Theory)	Numerical Descriptive Techniques	U-1: Measures of central tendency U-2: Measures of dispersion and moments	2 hrs	**2**
Minor-I (Lab)	Statistics Practical	Practical using manual calculation and Excel	4 hrs	**2**

Minor-I (Theory) Basics of data types and classification

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title & Code	Credit Distribution of The Course (Total - 02 Credit)			Eligibility Criteria	Prerequisite(s) of the Course (if any)
	Lecture	Practical	Experiential Lab		
Numerical Descriptive Techniques	2	2	0	10 + 2 from a recognized board in any stream	Basic Mathematics, Observation & Analytical Skills

Course Outcomes:

CO-1 Acquire knowledge of introductory statistics, its scope and importance in various areas such as Medical, Engineering, Agricultural and Social Sciences etc.

CO-2 Compute suitable measures of averages.

CO-3 Compute suitable measures of averages, dispersion, and higher order moments from sample/population data.

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

(1) Prepare the frequency distribution for qualitative and quantitative data.

(2) Find the summary measures, viz. the measures of central tendency, measure of dispersion, measures of skewness and kurtosis of a univariate data

Unit: 1 Measures of Central Tendency **(15Hrs)**

- Concept of central tendency, various measures of central tendency and their interrelationship. Merits and demerits.
- Empirical relation between mean, median and mode.
- Properties and applications of measures of central tendency.
- Partition values (quartiles, deciles and percentiles.)

Unit: 2 Measures of Dispersion and Moments **(15Hrs)**

- Concept of variation/dispersion, quartile deviation, Absolute and relative measures of dispersion with their merits, demerits and applications.
- Moments: raw moments, central moments, factorial moments and their interrelationship.
- Skewness, Kurtosis and their measures. Box plot.

MODE OF EVALUATION

Evaluation will be divided in two parts.

- **Internal:** 50 marks (will be decided by the college)
- **External:** 50 marks (will be conducted by college)

Minor-I (Lab) Numerical Descriptive Techniques

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course Title & Code	Credit Distribution of The Course (Total - 02 Credit)			Prerequisite(s) of the Course (if any)
	Lecture	Practical	Experiential Lab	
Numerical Descriptive Techniques	0	2	0	Basic Mathematics, Observation & Analytical Skills

Course Outcomes:

CO-1 Acquire the knowledge to identify the situation to apply appropriate measure of central tendency as per the nature and need of the data and draw meaningful conclusions regarding behaviour of the data.

CO-2 Ability to measure skewness and kurtosis of data and define their significance.

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

(1) To compute various measures of central tendency, dispersion, moments, skewness and kurtosis.

(2) To interpret summary Statistics of computer output.

Computing all the practical manually and using Excel

1. Problems based on Arithmetic Mean (AM), geometric mean, harmonic mean, weighted AM, trimmed mean, corrected mean.
2. Problems based on Mode, median, partition values.
3. Absolute and relative measures of dispersion, Box plots.
4. Problems on moments, skewness, and kurtosis.