FYUGP CURRICULAR FRAMEWORK FOR BACHELORS PROGRAMME WITH STATISTICS AS MAJOR 2023

SEMESTER	COURSE CODE	TYPES OF COURSE	TITLE OF COURSE	CREDITS THEORY	PRACTICAL
I	STS123J	CT-1	STATISTICS: DESCRIPTIVE STATISTICS	4	2
II	STS223J	CT-1	STATISTICS: CORRELATION AND REGRESSION ANALYSIS	4	2
III	STSS323J	CT-1	STATISTICS: PROBABALITY THEORY	4	2
IV	STS423J1	CT-1	STATISTICS: PROBABALITY DISTRIBUTIONS	3	1
	STS422J2	CT-2	STATISTICS: APPLIED STATISTICS	4	2
	STS422J3	CT-3	STATISTICS: VITAL STATISTICS	4	2
V	STS522J1	CT-1	STATISTICS: SAMPLING THEORY	3	1
	STS522J2	CT-2	STATISTICS: OPERATION RESEARCH-I	4	2
	STS522J3	CT-3	STATISTICS: SAMPLING DISTRIBUTIONS	4	2
VI	STS622J1	CT-1	STATISTICS: STATISTICAL COMPUTING - I	3	1
	STS622J2	CT-2	STATISTICS: STATISTICAL INFRENCE	4	2
	STS622J3	CT-3	STATISTICS: DESIGN OF EXPERIMENTS	4	2
FYUGP HONOURS					
VII	STS722J1	CT-1	STATISTICS: RESEARCH METHODOLOGY	3	1
	STS722J2	CT-2	STATISTICS: ADVANCED PROBABILITY THEORY	4	2
	STS722J3	CT-3	STATISTICS: LINEAR MODELS AND REGRESSION ANALYSIS	4	2
VIII	STS822J1	CT-1	STATISTICS: ADVANCED SAMPLING THEORY	3	1
	STS822J2	CT-2	STATISTICS: STATISTICAL COMPUTING - II	4	2
	STS822J3	CT-3	STATISTICS: OPERATION RESEARCH-II	4	2
FYUGP HONOURS WITH RESEARCH					
VII	STS722J1	CT-1	STATISTICS: RESEARCH METHODOLOGY	3	1
	STS722J2	CT-2	STATISTICS: ADVANCED PROBABILITY THEORY	4	2
	STS722J3	CT-3	STATISTICS: LINEAR MODELS AND REGRESSION ANALYSIS	4	2
VIII	STS822J1	CT-1	STATISTICS: ADVANCED SAMPLING THEORY	3	1
	STS822JP	PROJECT	PROJECT WITH DISSERTATION	0	12

HoD / CONVENOR BOARD OF UNDER-GRADUATE STUDIES

BACHELORS WITH STATISTICS AS MAJOR (CT - I)

1st SEMESTER

STS123J: STATISTICS _ DESCRIPTIVE STATISTICS   **Credits: 4+2**

Course Objectives:
The learning objectives include:
- To understand the Statistics, its scope and importance in various fields .
- To understand the Knowledge of methods for summarizing data sets, including common graphical tools (such as boxplots, histograms and stem plots). Interpret histograms and boxplots.

Course Outcomes:
After completing this course, a student will have:
- Knowledge of Statistics, its scope and importance in various fields
- Ability to understand concepts of sample vs. population and difference between different types of data.
- Knowledge of methods for summarizing data sets, including common graphical tools (such as boxplots, histograms and stem plots). Interpret histograms and boxplots.
- Ability to describe data with measures of central tendency and measures of dispersion

THEORY: 04 CREDITS

UNIT I
Introduction to Statistics: Meaning, origin, definition, limitations and applications of Statistics. Primary and secondary data, different methods of collection of primary data with merits and demerits. Sources of secondary data. Classification: meaning, objectives, types of classifications, Formation of discrete and continuous frequency distributions.

UNIT II
Diagrammatic and Graphical representation of Data: Diagrams: Meaning, importance of diagrams and general rules of construction. Types of Diagrams - simple, multiple, component, percentage bar diagrams and pie diagrams with simple illustrations.
Graphs: Types of Graphs - Histogram, frequency Polygon, frequency curve and Ogives, simple problems, location of mode, median and partition values from the graphs. Difference between diagrams and graphs.

UNIT III
Central Tendency: Meaning of central tendency and essentials of a good measure of central tendency: Arithmetic mean, Median, Mode, Geometric mean and Harmonic mean - definition, merits and demerits and their important Properties. Empirical relation between mean median and mode. Problems on both grouped and ungrouped data of all the measures.

UNIT IV
Dispersion: Meaning of measures of dispersion. Essentials of a good measure of dispersion, absolute and relative measures of dispersion. Range, Quartile deviation, Mean deviation and standard deviation with relative measures - definition, merits and demerits and their important properties. Properties of Standard deviation, simple problems on ungrouped and grouped data.

PRACTICAL: 02 CREDITS   **Preferably Computers Using Excel**

I.   Problems based on graphical representation of data by Histogram, Frequency polygons,
II. Problems based on graphical representation of data by Ogives, Stem andLeaf Plot, Box Plot.
III. Problems based on calculation of Measures of Central Tendency.
IV. Problems based on calculation of Measures of Dispersion.

BOOKS RECOMMENDED:

1. Gupta S. C. Fundamentals of Statistics, Himalaya Publishing House, Bombay
2. Mukhopadhaya, P. Applied Statistics, New Central Book Agency (P) Ltd., Calcutta
3. Gupta S P. and V K Kapoor Fundamentals of Mathematical Statistics, Sultan Chand, New Delhi
4. Goon, A.M., Gupta, M.K. and Dasgupta, B. (2013). Fundamental of Statistics, Vol I, World Press, Kolkata.
5. Goon, A.M., Gupta, M.K. and Dasgupta, B. (2011). Fundamental of Statistics, Vol II, World Press, Kolkata.
6. Gupta, S.C. and Kapoor, V.K. (2000). Fundamentals of Mathematical Statistics (10th ed.), Sultan Chand and Sons.
7. Hanagal, D. D. (2009). Introduction to Applied Statistics: A Non-Calculus Based Approach. Narosa Publishing Comp. New Delhi.
8. Miller, I. and Miller, M. (2006). John E. Freund's Mathematical Statistics with Applications, (7th Edn.), Pearson Education, Asia.
9. Mood, A.M. Graybill, F.A. and Boes, D.C. (2011). Introduction to the Theory of Statistics, 3rd Edn., Tata McGraw-Hill Pub. Co. Ltd.
10. Weatherburn, C.E. (1961). A First Course in Mathematical Statistics, The English Lang. Book Society and Cambridge Univ. Press.
11. Paratha SarathiBishnu and Vandana Bhattacherjee(2019): Data Analysis: Using Statistics and Probability with R Language, PHI Learning Pvt. Ltd. New Delhi.