

Govt. Degree College Baramulla
Department of Statistics
MULTIDISCIPLINARY COURSE (Syllabus)

CREDITS: 03

BST22M103: STATISTICS (BASIC STATISTICS)

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 samples. Population and difference between different types of data.*
- *Knowledge of methods for summarizing data sets, including common graphical tools (such as box plots, histograms and stem plots). Interpret histograms and box plots.*
- *Ability to describe data with measures of central tendency and measures of dispersion.*

UNIT-I

Introduction to Statistics and Basic Concepts:

Meaning, origin, definition, functions, 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- Chronological, Geographical, Qualitative and Quantitative classifications with illustrations. Formation of discrete and continuous frequency distributions.

Tabulation: meaning, objectives and rules of tabulation, format of a statistical table and its parts. Types of table, examples of preparation of a blank table and tables with numerical information.

Diagrammatic Graphical representation of Data: Diagrams: Meaning, importance of diagrams and general rules of construction of diagrams. 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-II

Measures of Central Tendency:

Meaning of central tendency and essentials of a good measure of central tendency. Types of measures of central tendency: Arithmetic mean, Median, Mode, Geometric mean and Harmonic mean - definition, merits and demerits. Properties of arithmetic mean. Problems on both grouped and ungrouped data for all the measures.

UNIT-III

Measures of Dispersion:

Meaning and objectives of measures of dispersion. Essentials of a good measure of dispersion, absolute and relative measures of dispersion. Types of measures of dispersion- Range, Quartile deviation, Mean deviation and standard deviation with relative measures-definition, merits and demerits. Simple problem on ungrouped and grouped data.

References:

1. Gupta S.C. Fundamentals of Statistics, Himalaya Publishing House, Bombay
2. Mukhopadhyaya, 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 Das Gupta, B. (2013). Fundamental of Statistics, Vol II, World Press, Kolkata.
5. Goon, A.M., Gupta, M.K. and Das Gupta, 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.