

**CORE COURSE V - BIOSTATISTICS**

**Objective:** To assess health status and needs of the community for planning, implementation and evolution of health programs for hospital/health management.

**Unit-1**

Statistics - definition - meaning - branches - biostatistics - vital statistics. Application and uses of biostatistics in health management and epidemiology.

Statistical data - methods of data collection - classification of data - construction of frequency distribution table - tabulations of data - general rules of tabulation - types of tabulation.

Presentation of data - diagrammatic - graphic - types - line - bar - pie - scatter - pictogram - spot man - histogram - frequency polygon - frequency curve - ogive.

**Unit-2**

Measures of central tendency - mean (calculation for individual, discrete and continuous series - mode ( for individual series ). Empirical relations connecting mean, median and mode. Merits and demerits of each type.

Measures of dispersion: Range and mean deviation (for individual series) - Standard deviation (Calculation for individual, discrete and continuous series. Co-efficient of variation - uses.

**Unit-3**

Correlation - different types of correlation - scatter diagram - correlation coefficient - rank correlation coefficient. Regression - basic concepts - linear regression - lines of regression

**Unit-4**

Sampling techniques: Criteria of good sample - sampling designs - simple random sampling - stratified sampling - systematic sampling - Multi-phase & multi-stage sampling - sample size - use of sampling - errors in sampling.

**Unit-5**

Probability: basic concepts. Normal distribution - binomial distribution - characteristics - standardizes normal variate.

Tests of significance - uses - sampling distribution - standard error - null hypothesis - levels of significant - test of large sample - normal test - test for proportion - test for small sample - simple test paired test - Unpaired test chi square test(for a 2x2 table)

**References:**

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Potti L.R.: A test book of statistics, Yamuna Publications, Thrivandram.

Lancaster H.O.: Introduction to Medical Statistics, Johnwiley & Sons., New York.

Leius A.E.: Biostatitics in Medicine Little Brown & Co. Boston.