ELECTIVE COURSE – I – BIOSTATISTICS

Unit I

Matrices : Matrix Algebra, Types of Matrices, Determinant of a matrix, Rank of a matrix, Singular and Non-Singular matrices. Inverse of matrix. Solving system of Linear equations using matrix method.

Unit II

Nature of biological and clinical experiments – collection of data in experiments – primary and Secondary data. Methods of Data collection. Classification and Tabulation. Diagrams and graphs of data.

Unit III

Measure of Averages – Mean, Median and mode. Use of these measures in biological studies. Measures of Dispersion for biological characters – Quartile Deviation, Mean Deviation and Standard deviation and coefficient of variation. Measures of skewness and Kurtosis. Corrletion and Regression – Rank Correlation – Regression equations. Simple problems based on biochemical data.

Unit IV

Basic concepts of sampling – Simple random sample, stratified sample and systematic sampling. Sample statistics. Sampling distribution and standard error. Tests of significance based large samples. Test for mean, difference of means, proportions and equality of proportions.

Unit V

Small sample Tests – Student 't' test for mean, difference of two means, test for correlation and regression coefficients. Chi-square test for goodness of an nonindependence of attributes. F test for equality of variances.

Books recommended :

1. Sundar Rao, Jesudian Richard – An Introduction to Bio-Statistics
2. Alwi E.Lewis. Bio-statistics, East West Press.
3. S.P.Gupta – Fundamentals of Statistics, Sultan Chand.