

Multivariate normal distribution, Data reduction techniques: Principle component analysis, Discriminant analysis, Cluster analysis, Canonical correlation.

Simple random sampling, stratified sampling and systematic sampling. Probability proportional to size sampling. Ratio and regression methods.

Completely randomized, randomized blocks and Latin-square designs. Connected, Orthogonal and balanced block designs, BIBD. Factorial experiments: confounding and construction. Series and parallel systems, hazard function and failure rates, censoring and life testing.