

Type/ Status : Core

Course Code : SOST 31414

Title : **Statistical Inference**

Learning Outcomes : On completion of this course unit the students will be able to

- Understand various methods of point estimators and their characteristics
- Understand interval estimators, confidence intervals and confidence limits
- Understand the various concepts related to the testing of hypothesis

Course Content :

- Difference between point estimate and interval estimate.
- Various characteristics of Point estimators, unbiasedness, efficiency and consistency, sufficiency, and their importance in estimation theory.
- Minimum variance unbiased estimation.
- Various methods of point estimation.
- Methods of Maximum Likelihood
- Methods of moments
- Interval estimation : Confidence interval for mean, confidence interval for two different means, confidence interval for proportions, confidence interval for variance, confidence for two different variances
- Hypothesis Testing : Type of Hypothesis, Type I and II error, p-value, significance levels, two sided test, Decision rule, power of the test, Language Sample Hypothesis tests, Small sample hypothesis tests, Population mean, Population Variance and Standard Deviation, Population proportional.

Methods of Teaching and Learning : Lectures, Discussions, Tutorials, and Assignments

Assessment Scheme :

Mid semester test	30%
Semester end Examination	70%

Recommended Reading :

Pfaffenberger R.C.(1977), *Statistical Methods for Business and Economics*, Ricard D. Irwin, Inc.

Guptha S.C. and Kapoor V.K. (2009), *Fundamentals of Mathematical Statistics*, Sultan Chand and Sons.