B.A.IVth Semester :(Core)

STATISTICAL METHODS FOR ECONOMICS

Teaching hours/week Number of Credits:06

Objective: : This paper exposes students to the Basic Statistics and use of various statistical tools in economics.

Module I. Introduction and Overview;

The distinction between populations and samples and between population parameters and sample statistics; the use of measures of location and variation to describe and summarize data; population moments and their sample counterparts.

Module II. Elementary Probability Theory.

Sample spaces and events; probability axioms and properties; counting techniques; conditional probability and Bayes' rule; independence.

Module 3. Random Variables and Probability Distributions.

Defining random variables; probability distributions; expected values of random variables and of functions of random variables; properties of commonly used discrete and continuous distributions (uniform, binomial, normal, poisson and exponential random variables).

Module 4. Random Sampling and Jointly Distributed Random Variables

Density and distribution functions for jointly distributed random variables; computing expected values; covariance and correlation coefficients.

Module 5. Sampling Principal steps in a sample survey;

Methods of sampling; the role of sampling theory; properties of random samples.

Module 6. Point and Interval Estimation

Estimation of population parameters using methods of moments and maximum likelihood procedures; properties of estimators; confidence intervals for population parameters.

Readings: 1. Jay L. Devore, Probability and Statistics for Engineers, Cengage Learning, 2010.

2. John E. Freund, Mathematical Statistics, Prentice Hall, 1992.

3. Richard J. Larsen and Morris L. Marx, An Introduction to Mathematical Statistics 11 and its Applications, Prentice Hall, 2011.

4. William G. Cochran, Sampling Techniques, John Wiley, 2007.

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