Course Title: **Probability & Statistics (3 Cr.)**
Course Code: **CACS202**
Year/Semester: **II/III**
Class Load: **5 Hrs. / Week (Theory: 3 Hrs, Tutorial: 1 Hr., Practical: 1 Hr.)**

Course Description

This course covers basic concept of statistics, measurement of central tendency, correlation & regression analysis, probability, sample survey, sample survey methods and design of experiment. These topics are essential tools for research.

Course Objective

The general objectives of this course are to provide fundamental concept of Statistics, Probability, Sample Survey and their applications in the area of Social Science and Computer Application.

Course Contents

Unit 1 Introduction to Statistics **3 Hrs.**

Meaning, Scope and Limitations of Statistics, Types and Sources of Data, Methods and Problems of Collection of Primary and Secondary Data.

Unit 2 Descriptive Statistics **6 Hrs.**

Measure of Central Tendency (Arithmetic Mean, Median, Partition Values, Mode); Measure of Dispersion (Absolute and Relative Measures: Range, Quartile Deviation, Mean Deviation, Standard Deviation, and Coefficient of Variation)

Unit 3 Correlation and Regression Analysis **6 Hrs.**

Correlation: Definition, Scatter diagram, Karl Pearson's coefficient of correlation, Numerical problems for determination of Correlation Coefficients.

Regression: Definition, Dependent and Independent Variables, Least Square method only, Numerical Problems.

Unit 4 Probability **8 Hrs.**

Definition of Probability, Two basic Laws of Probability(without proof), Conditional Probability; Probability Distributions (Binomial, Poisson and Normal); simple numerical problems.

Unit 5 Sample Survey **6 Hrs.**

Concept of Population and Sample; Needs of Sampling; Censuses and Sample Survey; Basic Concept of Sampling; Organizational Aspect of Sample Survey; Questionnaire Design; Sample Selection and Determination of Sample Size; Sampling and Non Sampling Errors.

Unit 6 Sample Survey Methods **10 Hrs.**

Types of Sampling; Simple Random Sampling with and without Replacement;