**B.COM.**

**SEMESTER IV**

**Business Statistics – II (GE 5)**

**(100 Marks - 60 Lectures)**

**Unit I Correlation and Regression Analysis** **(14Lectures -30marks)**

Meaning, Types and Methods of studying Correlation, Scatter Diagram, Karl Pearson’s Coefficient of Correlation, Spearman’s Rank Coefficient of Correlation, Properties of Coefficient of correlation, Linear Regression, Lines of regression and regression coefficients.

**Unit II Probability Theory** **(21Lectures -36 marks)**

Elements of Probability-Random Experiments, events, definition of probability, conditional probability, addition and multiplication theorem, Mathematical expectation.

Theoretical Distribution - Random variable, Binomial, Poisson and Normal Distribution.

**Unit III Sampling Theory**  **(14Lectures -16 marks)**

Methods of sampling- Census and Sample enumeration, Methods of Sampling: Simple Random Sampling, Systematic Sampling, Stratified Sampling, Cluster Sampling, Purposive Sampling, Quota and multi stage sampling (with examples).

Test of Hypothesis and Estimation- Sampling distribution, Standard error, Sample mean and Sample proportion, confidence limits, population mean and population proportion, Procedure for testing of hypothesis, Type I and Type II error, critical region, level of significance, test of significance for large samples.

**Unit IV Interpolation and Extrapolation (11Lectures -18marks)**

Finite differences, Forward and Backward differences, Forward and Backward difference table, Newton-Gregory forward and backward difference formula for equidistant values of the argument (only applications), Lagrange’s Interpolation formula for unequally spaced points (only applications), Shift Operator, Binomial Expansion method to find missing values ( maximum 2 missing values).

**References:**

1. Gupta S.P., *Statistical Methods*, Sultan Chand & sons.
2. Gupta C.B., *Fundamentals of Statistics*, Himalaya Publishing House.
3. Shah R.J., *Statistical Methods*.
4. Mazumdar Neeta, *Statistical Techniques*, RajhaunsVitaran.
5. Sastry S.S., *Introductory Methods of Numerical Analysis*