JYOTI NIVAS COLLEGE AUTONOMOUS
SYLLABUS FOR 2018 BATCH AND THEREAFTER

Programme: B.Com.   **Semester: III**

STATISTICAL ANALYSIS

Course Code: 18BC303   **No. of Hours: 60**

COURSE OBJECTIVES:

- To equip students with the various statistical techniques available for data analysis in the fields of business and management
- To give students an in depth knowledge about theoretical distribution and help them arrive at a conclusion.
- To enable student to understand and analyse probability and its usage.
- To enable students to make decision using Decision Theory.

LEARNING OUTCOMES:

- Infer some characteristics of a population by examining a portion of the population.
- Compare characteristics of different populations.
- Make informed decisions in a probabilistic business environment.

UNIT 1

Probability   **12 HRS**

Basics definitions. Classical, Axiomatic and Empirical definitions of Probability. Addition theorem of probability for two events (Statement only). Independence of events. Multiplication theorem of probability for two events (Statement only). Statement of Bayes' theorem and its applications.

UNIT 2

Random Variables: **15 HRS**

Definition of a random variable, discrete random variable, probability mass function. Mathematical expectation and variance of a random variable, definition and properties. Probability Distributions Bernoulli, Binomial and Poisson distributions - Statement of properties and computation of probabilities. Normal distribution - Properties and computation of probabilities.

UNIT 3

Tests of significance **13 HRS**

Statistical hypothesis. Simple, Composite, Null and Alternative hypothesis. Two types of error, level of significance. Critical region, size and power of a test. Degrees of freedom.

Large sample tests

Test for normal mean and equality of means. Test for proportions and equality of proportions.

Applications of Student's 't' distribution

Test for single mean and equality of means for independent and dependent samples.

UNIT 4

Chi Square tests **10 HRS**

Test of Goodness of fit. Independence of attributes, and population variance.

F tests

Test for equality of two variances. Test for equality of several means through ANOVA - One way classification.

UNIT 5

Elementary Decision Theory **10 HRS**

Decision making in the case of unknown probability of events with Maximin, Maximax, and Minimax regret criteria. Decisions under uncertainty - EMV and EOL methods.

SKILL DEVELOPMENT

- Toss a coin 10 times and fit a probabilistic distribution and find out if the coin is biased or not using Chi square

- Write down the difference in the procedures of testing Z-test and T-test.

BOOKS FOR REFERENCE

1. Basic Statistics – B.L Agarwal – New Age International Publishers – Fourth Edition - 2006.

2. Fundamentals of Statistics – S. C Gupta-Himalaya publishing House – Sixth edition

3. Business Statistics – Shukla S.M and Sahai S P – SahithyaBhawan Publications –2005

4. Statistical Methods – D.Patri and D.N Patriu – Kalyani Publishers – Fourth Edition- 2005