### Course Title : Statistics for Commerce

**Course Code : STAT 445**

Credit Hours : 03

Total Weeks : 16

Total Hours : 48

**Course Objectives:**

A sound knowledge of Statistical techniques is necessary for the study of modern Business and Economics. In view of this, Statistics is now being taught as a compulsory subject to all the students of Economics, Management and Business. The present course is designed to meet the requirement of the students of BBA. The basic aim of this course is to expose various techniques of Statistics in a simple, lucid and logical way.

Week 1 Meaning of Statistics; Characteristics of Statistics; Descriptive and inferential Statistics; Populations and Samples; Importance of Statistics; Observations and Variables; Discrete and continuous random variable;

Week 2 Data and Collection of Data; Primary Data and Secondary Data; Presentation of Data; Frequency Distribution; Steps involved in the construction of Frequency Distribution;

Week 3 Measure of Control Tendency; Criteria of Satisfactory Average; Types of Average; The Arithmetic Mean; Mean From Grouped Data;

Week 4 The Median; The Mode; Empirical Relation between Mean, Median and Mode;

Week 5 Quartiles (Q1, Q2, Q3); Measure of Dispersion; Range and its Coefficient; Inter Quartile Range and Its Coefficient; Semi-Inter Quartile Range and its Coefficient; Moments about Mean;

Week 6 Skewness and Kurtosis; Pearsonian Coefficient of Skewness; Bowley’s Coefficient of Skewness; Moment Ratios;

Week 7 Variance and Standard Deviation; Coefficient of Variation;

Week 8 Simple Regression; Deterministic and Probabilistic Models; Satter Diagram; Simple Linear Regression Model; Least Square Regression line; Standard Deviation of Regression OR Standard error of estimate;

Week 9 Correlation; Pearson Product Moment Correlation;

Week 10 Index Numbers; Introduction; Simple and Composite Index Numbers; Problems involved in the Construction of Index Numbers; Main Steps in the Construction of Index Number whole sale Price;

Week 11 Fixed Base Method and Chain Base Method; Advantages and Disadvantages of Chain Base Method;

Week 12 Unweighted Index Numbers; Simple Aggregative Index; Simple Average of Relatives;

Week 13 Weighted Index Number; Weighted Aggregative Price Index Numbers; Laspeyre’s Price Index; Fisher’s Ideal Index;

Week 14 Probability; Introduction; Sets; Venn diagram; Operation in Sets; Random Experiments, Sample Space, Event; Counting Sample Points, Formal Definition of Probability; Mutually exclusive and Not-Mutually exclusive events;

Week 15 Addition Law of Probability for Mutually Exclusive and not mutually exclusive Events; Discrete Probability Distribution, Binomial experiment; Binomial Probability distribution;

Week 16 Application of Binomial Probability; Distribution in Business

**Recommended Texts:**

Chaudry, S. M. (2011). *Introduction to Statistical Theory.* Ilmi Kitab Khana.

Lind, D.A., Marchal, W.G., & Wathen, S.A. (2011). *Statistical Techniques in Business and Economics*. McGraw-Hill.

Muhammad, F. (2005). *Statistical Methods and Data Analysis*. Faisalabad: Kitab Markaz.

Douglas, D. & Clark, J. (2003). *Business Statistics,* (4th Edition). Barron‘s Educational Series Inc.

Khan, S. (latest Edition). *Introduction to Business Statistics.* Research and Development Center Peshawar.

Walpole, R. E. (1982). *Introduction to Statistics,* (3rd Edition). New York: Macmillan Publishing Co. Inc.