**Course: STATISTICS I**

Week 1: what is Statistics; Introduction: Population & Sample, Types of Variables and Data, Cross section vs time-series data.

Week 2: Frequency Table and Graphical Presentation of Data—Stem and Leaf plot, Box plot, Histogram, Frequency curves and Pie Charts.

Week 3: Descriptive Statistics – Measures of Centre: Mean, Median, Mode, Position

Week:4 Measures of Dispersion, Skewness.

Week 5 & 6: Probability: basic Concepts, Counting techniques, Probability Laws, Marginal and Conditional Probabilities, Independence.

Week 7: Random Variables – Discrete and Continuous, its Mean & Variance,

Week 8 & 9: Discrete Probability Distributions: Hyper-geometric, Binomial and Poisson Probability Distributions.

Week 10 & 11: Continuous Probability Distribution: Normal distribution and its properties. Use of Area Table, Inverse use of Area Table, Fitting of Normal Distribution.

Week 12& 13: Bivariate Distribution, Scatter Plot, The meaning of the term ‘Linear’, Ordinary Least Squares Method, Linear Regression Model, Assumptions, Linear Regression: Properties of the OLS estimators, Variance, Covariance and Correlation

Week 14: Time Series: Components of Time series, Various methods of measuring trend and Seasonal Variations.

Week 15: Revision

**Tex Books** (To read the appropriate sections of the following books and to attempt relevant problems)

A. Wonnacott and Wonnacott, (2003) Introductory Statistics for Business and Economics, John Wiley and Sons, New York.

B. Chaudhry Sher Muhammad and Dr. Shahid Kamal, (2009) And Introduction to Statistical Theory, 8th edition Illmi Kitabl Khana, Lahore.

C. Lind D.A., Marchal W., and Wathern S., Statistical Techniques in business and economics, 13th edition

D. Walpole R.E. Introduction to Statistics, 3rd Edition, MacMillian Publishing Co.

**COURSE: STATISTICS**

**Course Objective:** The focus of this course will be to encourage critical thinking in students by emphasizing on concepts of the subject and illustrating them with the help of examples by using the data from real world situation. It will make the students learn by conducting experiments, by means of data collection, processing, presentation and inference. It will begin with the sources of basic statistics which are foundations of all economic and business studies and will be blended with the theory of basic statistical tools. Mathematical statistics are not part of this program rather the applications of data processing form the core of the course.

**Teaching Strategy:** To achieve the desired objectives of teaching business statistics there should essentially be a balanced mixture of theory, methods and applications. The Course mainly comprises of covering statistical theory. Extensive exercises and computer exercises will form the discussion sessions. The students will be expected to work together but submission of assignments will be on an individual basis.

**Final Assessment Criteria:**

Final Examination 40% Mid-Term Examination 35% Test and Quizzes 10% Assignments 05% Attendance and Class Participation 10%

Attendance by all students is compulsory and marks will be deducted for less than 90% attendance. Failure to appear for a test will be equivalent to a zero mark.