Syllabus

Panjab University, Chandigarh

Quantitative Methods
(Statistics Portion)

New Syllabus (Effective from 2015 onwards)

M.A. Economics, Sem–I & II

Semester–I

Unit–III

Correlation and Regression Analysis: Multiple and Partial Correlation involving three Variables. The Linear Regression Model; Finding the Multiple Linear Regression Equation and Coefficients upto two explanatory variables: Interpretation of the Coefficients, R^2 and adjusted R^2.

Time Series Analysis: Methods of Trend Measurement: Quadratic, Exponential and Modified Exponential. Seasonal Indices by Methods of Simple Average, Ratio to moving Average and Ratio to Trend.

Unit–IV

Probability Theory: Classical and Axiomatic Definitions of Probability; Additive and Multiplicative Theorems and examples; Random Variable and Expected Values, Moments and Moments Generating Function (m.g.f.).

Index Numbers: Concept, Price Relative, Quantity Relative and Value Relative, Laspeyer's Paasche's and Fisher Index Numbers. Family Budget Method; Splicing of Index Numbers; Problems in the Construction and Limitation of Index Numbers. Test of an Ideal Index Number.

Semester–II

Unit-III

Probability Distributions: Properties and Applications of Binominal, Poisson and Normal Distributions.

Statistical Inferences: Parameters and Estimates, Sampling Distribution of a Statistic, Standard Error and its Utility; Distribution of Sample Mean, Properties of an Ideal Estimator; Unbiasedness, Consistency, Efficiency and Minimum Variance; Interval Estimation and Confidence Interval.

Unit-IV

Tests of Significance: Large and Small Sample Tests based on Normal and t Distribution, Significance of Mean, Difference between means, Single Proportion, Difference between two proportions, Simple Correlation Coefficient and Simple Regression Coefficient, test based on F and Z Distribution (Fisher's Z Statistics).

Chi-Square Tests: Conditions for Chi-square test; Application of X^2 distribution, Goodness of Fit, Independence and Specified Value of the Variance.

Analysis of Variance: Applications with regard to one way and two way classifications.