## Third Year T.D.C. Arts
## Paper –I
# QUANTITATIVE TECHNIQUES IN ECONOMICS

**Course Outcomes:**

CO1: The basic aim of this course is to acquaint the students with sampling techniques and tools of collection.

CO2: This course covers elementary statistical techniques which are frequently used for data analysis in social researches.

CO3: This course also provides basic knowledge of mathematical techniques -Differential and Integration, which are frequently used in economic analysis.

## UNIT –I

Statistics–Definition, Sampling and Types of Sampling, Primary data Secondary Data, Methods of Collecting Primary Data, Secondary Data, Classification and Tabulation of Data, Presentation of Data–Diagrams and Graphs.

## UNIT –II

Measures of Central Tendency : Mean, Median, Mode.

Measures of Dispersion –Range, Mean Deviation, Standard Deviation, Coefficient of Variation, Quartile Deviation, Skewness.

## UNIT –III

Correlation-Meaning, Causation & Correlation, Karl Pearson's Coefficient of Correlation, Spearman's Rank Correlation.

Simple Linear Regression-Introduction, Lines of Regression, Estimation of Regression.

Time Series –Introduction, Components of Time Series, Measurement of Trends –Methods of Moving Averages and Least Squares.

## UNIT –IV

Probability: Concept, Rules (addition and multiplication).

Index Numbers –Meaning, Significance and Types of Index Numbers, Methods of Constructing Index Numbers- Simple Price Relative Methods and Aggregative Methods.

# UNIT –V

Calculus: Simple Differentiation of a function, Maxima and Minima. Partial and Total Differential.

Integration of a function: Concept and Methods.

## Basic Reading List

1. Chiang, A.C. (1986), Fundamental Methods of Mathematical Economics (3rd Edition), McGraw Hill, New Delhi

2. Croxton, Crowden and Klein (1971) –Applied General Statistics, Prentice Hall of India, New Delhi.

3. Gupta, S.C. (1993) –Fundamentals of Applied Statistics, S. Chand and Sons, New Delhi.

4. Madnani, G.M.K.- Arthshastra Me Ganit Ke Prayog .(Hindi Version)

5. Nathuramka L.N. (2016), Arthshastra Me Ganit Ke Prayog, College Book House, Jaipur.(Hindi Version)

6. Nagar, A.L. and Das, R.K. (1993) –Basic Statistics, Oxford University Press, New Delhi.

7. Speigal, M.R. (1992) –Theory and Problems of Statistics, McGraw Hill Book Co., London.

8. Levin and Rubin –Statistics for Management, Prentice Hall of India, New Delhi.

9. Srivastava, S.C. and Sangy Srivastava –Fundamentals of Statistics, Anmol Publications Pvt. Ltd., New Delhi.

10॰ कैलाशनाथ नागर – सांख्यिकी के मूल तत्व, मीनाक्षी प्रकाशन, मेरठ।

11॰ सुदामा सिंह, ओ.पी. सिंह एवं वाई.के.सिंह – अर्थशास्त्र गणित एवं प्रारम्भिक सांख्यिकी, राधा पब्लिकेशन, नई दिल्ली।

12॰ राव, गुप्ता एवं सुथार – व्यावसायिक सांख्यिकी।