**ST. JOSEPH'S COLLEGE FOR WOMEN (A), VISAKHAPATNAM**

**IV SEMESTER** **ECONOMICS** **TIME: 5/4 HRS/WEEK**

**ECS 4704 (4)** **MAX.MARKS:100**

**STATISTICAL METHODS FOR ECONOMICS**

**W.e.f. Year2021- 2022 -SYLLABUS**

## OBJECTIVES:

Students are able to recognize

1. The role of statistics in economic analysis
2. Present data with suitable diagrams.
3. Estimate averages and dispersion.
4. Implement trend and index numbers in research work.

## LEARNING OUTCOMES FOR THE COURSE:

At the end of the course, the student is expected to demonstrate the following cognitive abilities and psychomotor skills.

1. Remembers and states in a systematic way (Knowledge)
   a. The definitions, terms and their meaning relating to statistical methods
   b. Various formulae used to measure central tendency, correlation regression and Indices
2. Explains (understanding)
   a. Importance of statistics and its applications
   b. The method of classification of primary data
   c. Uses of Correlation and Regression analysis, time series and index numbers in economic analysis
3. Analyses and solves using given data and information (analysis and evaluation)
   a. Different kinds of statistical problems using various principles and formulae relating to central tendency, correlation, regression, time series

and indices

b. To interpret data and suggest solutions to economic problems

4. Draws critical diagrams and graphs.

a. Histogram, Frequency Polygon and Frequency Curve

b. More than cumulative and less than cumulative frequency curves (Ogive)

c. Different types of Bar diagrams

d. Pie Diagram and its uses in economic analysis

**MODULE – 1:NATURE AND DEFINITION OF STATISTICS** :

Introduction to Statistics – Definition, scope, importance and limitations of Statistics – Primary and Secondary data- Census and Sampling techniques and their merits and demerits.

**MODULE – 2:DIAGRAMMATIC ANALYSIS :**

Collection of data - Schedule and questionnaire – Frequency distribution – Tabulation – diagram and graphic presentation of data – Histogram, Frequency Polygon, Cumulative Frequency Curves - Bar Diagrams and Pie Diagram

**MODULE – 3:MEASURES OF CENTRAL TENDENCY AND DISPERSION :**

Measures of Central Tendency and Dispersion - Types of averages- Arithmetic Mean, Geometric Mean, Harmonic Mean – Median – Mode – Dispersion - Range, Quartile Deviation, Mean Deviation, Standard Deviation- Coefficient of Variation.

**MODULE – 4:CORRELATION AND REGRESSION :**

Correlation and Regression Meaning, Definition and uses of Correlation- Types of Correlation- Karl Pearson's Correlation coefficient - Spearman's Rank Correlation- Regression Equations - utility of regression analysis – Demand forecasting.

**MODULE – 5: TIME SERIES AND INDEX NUMBERS :**

Time Series and Index Numbers: Definition and components of Time

Series – Measurement of Time Series – Moving Average and the Least Squares Method – Index Numbers - Concepts of Price and Quantity Relatives – Laspeyer's, Paasche's and Fisher's Ideal Index Numbers – Uses and Limitations of Index Numbers.

**REFERENCE BOOKS:**


1. B. R. Bhat, T. Srivenkataramana and K.S. MadhavaRao (1996): Statistics: A Beginner's Text, Vol. I, New Age International (P) Ltd.
2. Goon A.M, Gupta M.K., Das Gupta B. (1991), Fundamentals of Statistics, Vol. I, World Press, Calcutta.
3. M. R. Spiegel (1989): Schaum's Outline of Theory and Problems in Statistics,Schaum's Outline Series.
4. F. E. Croxton, D. J. Cowden and S. Kelin S (1973), Applied General Statistics,

   Prentice Hall of India. 2.
5. S.P. Gupta, Statistical Methods , S. Chand & Co, 1985
6. S. C. Guptha, Fundamentals of Statistics, Himalaya Publishing House, Hyderabad.
7. Digambar Patri and D. N. Patri, Statistical Methods for Economics, Kalyani Publishers, Ludhiana, 2017.
8. Telugu Akademy Book, ParimanathmakaPaddathulu (For B.A.).


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