

Basic Statistics for Economics

Course Code: **IECOK003T**

Course Title: Basic Statistics for Economics

Semester: I

Credits: **4**

Rationale

The major goal of the course is to teach students how to use the different tools and methods of descriptive statistics to understand different economic phenomena and analyse economic data.

Course Outline

Contents	No. of Lectures
Unit I: Presentation of Data and Measures of Central Tendency Statistics: Scope and meaning of Statistics, Importance of Statistics in Economics; Classification Tabulation and Presentation of data. Measures of Central Tendency: Arithmetic Mean, Median and Mode (for both Grouped and Ungrouped Data), Properties of Arithmetic Mean, Graphical Location of Median and Mode, Comparison of Mean Median and Mode; Geometric and Harmonic Mean	7
Unit II: Measures of Dispersion Range, Quartile Deviation, Mean Deviation and Standard Deviation, Properties of Standard Deviation, Comparison of Different Measures of Dispersion, Measures of Relative Dispersion–Curve of Concentration, Measurement of Economic Inequality- Gini Coefficient and Coefficient of Variation/Lorenz Curve, Measures of Skewness and Kurtosis. The Concept of Moments. Mathematical Notations, Mathematical Expectation and Generating Functions.	7
Unit III: Correlation and Regression Analysis Elementary Analysis of Linear Correlation: Covariance, Scatter Diagram, Coefficient of Simple Correlation–Properties and the Method of Calculation, Concept of Spearman's Rank Correlation. The Concept of Regression, Regression Lines and their Estimation in a Bivariate series, Least Squares Method, The Concept of r^2 and Standard Error of Estimate.	7
Unit IV: Index Numbers Index Numbers: Their Concept as Weighted Averages, Problems in the Construction of Index Numbers, Uses of Index Numbers; Laspeyres and Paasche index numbers; Fishers Test for Index Numbers; Chain Base Index, Cost of Living Index Number (Different Formulae), Wholesale Price Index and Cost of Living Index in India, Base Shifting,	7
Unit V: Time Series Analysis Time Series Analysis: Components, Approaches to Time Series, Estimation of Seasonal and Cyclical Variations. Methods of Moving Averages. Interpolation and Extrapolation techniques.	7

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Course Outcomes

After the successful completion of the course, the students will be able to

- Classify, Tabulate and present the data.
- Analyze statistical data with the help of graphs.
- Analyze statistical data using measures of central tendency and measures of dispersion.
- Understand statistical methods efficiently and apply them to the real world problems.

Text Books

1. Gupta S. P. "Statistical Methods", Sultan Chand & Sons, N. Delhi (Latest Edition).
2. Gupta, S. C. and Kapoor, V.K. (2008): *Fundamentals of Mathematical Statistics*, 4th Edition (Reprint), Sultan Chand & Sons
3. Das N G (2008), *Statistical Methods*: Tata Mc-Graw Hill
4. Hogg, R.V., Tanis, E.A. and Rao J.M. (2009): *Probability and Statistical Inference*, Seventh Ed, Pearson Education, New Delhi.

Reference Books

1. Croxton and Dudley "Applied General Statistics", (Latest Edition).
2. Hooda, R. "Statistics for Business and Economics", Macmillan, ND (Latest Edition).
3. Jay L. Devore, Probability and Statistics for Engineers, Cengage Learning, 2010.
4. Richard J. Larsen and Morris L. Marx, An Introduction to Mathematical Statistics and its Applications, Prentice Hall, 2011.
5. Mantzopoulos Victoria L (1995), *Statistics for the Social Sciences*: Prentice Hall, Englewood Cliffs, NJ.
6. Fleming Michael C. and Joseph G. Nellis (1996), *The Essence of Statistics for Business* 2e :Prentice Hall, Hemel Hempstead
7. Neil Weiss (1993), *Elementary Statistics* 2e: Addison Wesley, Reading, MA
8. Monga G S (2010) *Mathematics and Statistics for Economists*.: Vikas Publication House Pvt Ltd
9. Wetherill, G.B (1970), *Elementary Statistical Methods*: Pitman London
10. Croxton E.E, Cowden, D.J (1955) *Applied General Statistics*. Prentice hall Inc

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