GUJARAT UNIVERSITY

B. COM. (HONS)
SEMESTER – III
STATISTICS FOR ECONOMICS
COURSE CODE – DSC C STA 233
CREDIT MARK DISTRIBUTION – 04
AS PER NEP 2020 (To be effective from June 2024)

Lecture 04 Hours
Tutorial – 00
Practical – 00

COURSE OBJECTIVES

- To familiarize the basic concepts and theories of economics, elementary statistics and mathematics.
- To facilitate an understanding of the ability to use statistical techniques to analyze data and assess the accuracy of the resulting estimates and conclusions.
- To develop skill in forecasting scenarios by understanding data chronology and demographics.

PRE – REQUISITE

- To effectively approach Statistics for Economics, it is essential to have a foundational understanding of key mathematical concepts and statistical techniques. This includes proficiency in algebra and calculus, particularly differential and integral calculus, which are fundamental for grasping advanced economic modeling and analysis. Knowledge of probability theory and its applications in economics, including concepts such as random variables, probability distributions (especially normal distribution), and hypothesis testing, is crucial for interpreting economic data and making informed decisions. Familiarity with regression analysis and its variants, such as linear regression and multiple regressions, is essential for modeling relationships between economic variables. Additionally, understanding basic economic principles and concepts, such as supply and demand, elasticity, and market structures, provides the necessary context for applying statistical methods to economic data effectively.

CO – REQUISITE

- The learner should have basic understanding of mathematics and economics.

COURSE OUTCOMES

- Develop skills in demographic analysis methods. Understand the comparative strengths and weaknesses of different demographic methods. Apply demographic methods to analyze population and health issues.

- Understand the meaning and uses of business forecasting. Explore different forecasting methods. Learn about the Least Square method and exponential smoothing.
- Understand the concept of Input-Output analysis. Explore assumptions and limitations. Study Leontief's static open model and its application
- Explore the meaning and uses of time series data. Learn about trend determination using graphical, moving average, and least square methods. Understand seasonal components and indices.

UNIT	CONTENT	WEIGHTAGE
1	**DEMOGRAPHIC METHOD** ➢ Meaning, definition and uses of demographic statistics ➢ methods of collecting demographic statistics namely • Registration method • Census method • Analytical method ➢ Analytical method, Mortality Rates like (i) CDR (ii) SDR (iii) IMR ➢ Birth and Fertility rates like (i) CBR (ii) GFR (iii) SFR (iv) TFR ➢ simple sums on all above rates	**25%**
2	**BUSINESS FORECASTING** ➢ Meaning and uses of Business Forecasting ➢ Different methods of Forecasting: Regression Analysis, Index Numbers, Economic models, Input output models, Opinion poll method, Extrapolation, Graphical method (Only theoretical explanation of these methods) ➢ Least Square method for linear and quadratic relationship between the variables and exponential smoothing method ➢ Examples based on these two methods along with their theoretical explanation	**25%**
3	**INPUT - OUTPUT ANALYSIS** ➢ Meaning of Input - output analysis ➢ Assumption and limitations ➢ Leontief's static open model - importance and application of the model ➢ Simple examples up to the matrix of order 3×3	**25%**
4	**TIME SERIES** ➢ Meaning and uses of time series ➢ Various components of time series, determination of trend by using graphical, moving average and least square method ➢ To separate seasonal component by using sale forecasts and seasonal variation by using moving average method, Seasonal Indices, with examples	**25%**

Pedagogical Tools:

- Classroom Lectures and discussion
- Problem Solving
- Tutorial
- Group Discussion
- Seminar
- Assignments

MODE OF EVALUATION:

Evaluation will be divided in two parts.

- **External:** Semester end Examination will be conducted by the Gujarat University of 50 Marks
- **Internal:** Internal Evaluation of 50 marks will be decided by the colleges / Institutes/ University departments as per the instruction given by the University time to time.

FBLD (Flip Blended Learning Design Template)

- Any One Unit from the above syllabus can be discussed by the faculty through online mode.
- Online mode can be SWAYAM MOOC Course or any other suggested by the UGC or Gujarat University.

REFERENCE BOOKS:

1. Rowland, Donald T. "Demographic Methods: Their Application in Demography, Public Health, Policy, and Research."
2. Hanke, John E. and Wichern, Dean W. "Business Forecasting."
3. Miller, Ronald E. and Blair, Peter D. "Input-Output Analysis: Foundations and Extensions."
4. Box, George E. P., Jenkins, Gwilym M., and Reinsel, Gregory C. "Time Series Analysis: Forecasting and Control."
5. Goon, A.M., Gupta, M. K., and Das Gupta, B. (2005) "Fundamentals of Statistics- Vol. I, World press Ltd, Kolkata."
6. Gupta, S.C. and Kapoor, V.K. (2007) "Fundamentals of Applied Statistics," Sultan Chand & Sons, New Delhi.
7. Guilford, J. P. (1986) "Fundamental Statistics in Psychology and Education," McGraw-Hill Book Company, New Delhi.
8. Srivastava, S. C. and Srivastava, S. (2003) "Fundamentals of Statistics," Anmol Publications Pvt. Ltd., New Delhi.