NIRMA UNIVERSITY

Institute:	**Institute of Commerce**
Name of Programme:	**B.Com. (Hons.)**
Course Code:	2CC701
Course Title:	**Statistics**
Year of Introduction:	**2022-23 (Semester – II)**

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Course Learning Outcomes (CLO):

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

1. Explain basic theory of probability and its applications in business. [BL-2]
2. Apply basic statistical distributions and its application in business. [BL-3]
3. Use sampling in business contexts. [BL-3]
4. Apply time series analysis to model the relationship between variables. [BL-3]
5. Evaluate the relationship among variables using correlation and regression analysis [BL-3]

Syllabus	Teaching Hours
Unit I: An overview of Statistics • Introduction: Data and Statistics • Scales of Measurement, Types of data, Data Sources • Basic concepts of population and sample • Probability sampling methods • Non probability sampling methods • Tabular and Graphical Display of Data using Ms Excel • Descriptive Statistics: Measures of Location, Variability, and Distribution and Application using Ms Excel.	8

Unit II: Correlation and Regression **Correlation Analysis:** • Definition, Meaning • Properties of Coefficient of correlation • Types of Correlation • Correlation Coefficient • Application using MS Excel **Regression Analysis:** • Introduction, distinction between correlation and regression • Regression Model: Estimation of regression equation using Least Squares Method • Coefficient of Determination and its interpretation. • Application using MS Excel	8

Unit III: Probability and Mathematical Expectations
• Basic Concepts: Random Experiments, Sample space, events
• Basic Probability, Conditional probability, Independent Events, Multiplication rule
• Baye's Theorem
• Application of Mathematical Expectation
  • Definition of Random variable
  • Discrete and continuous random variable
  • Concept of probability distribution
  • Expected value of discrete random variable
  • Variance of discrete random variable
Introduction to Binomial, Poisson and Normal Distributions
	10

Unit IV: Time Series Analysis • Introduction • Components of time series • Measurements of forecasting error • Methods-Moving average and exponential smoothing • Application using Ms Excel	4

Suggested Readings:

1) Anderson, D. R., Sweeney, D. J., Williams, T. A., Camm, J. D., & Cochran, J. J. (2021). Statistics for Business & Economics. Cengage Learning.
2) Davis G., and Pecar B, (2013). Business Statistics using Excel, Oxford
3) Gupta S.C., (2020). Fundamental of statistics, Sultan Chand & Sons, Delhi
4) Hooda, R.P., (2021). Introduction to statistics, Macmillan India Ltd.
5) Levin, R. and Rubin, S, (2021). Statistics for Management, Printice Hall of India Pvt. Ltd., New Delhi