BBCC1003 BUSINESS STATISTICS AND LOGIC (3-1-0)

Course Description:
Quantitative Aptitude tests have been one of the key components in all competitive exams across the globe in recent years. All tests include such aptitude problems to assess a candidate's arithmetic precision, conceptual numerical ability, analytical ability and rational thinking applicability. Hence this course on Business Statistics and Logic has been introduced as part of BBA programs.
Business Statistics helps us to make business decisions under uncertainties. Such decisions must be objective and unbiased and based on quantitative data. This necessitates an analysis of data using appropriate statistical tools and hence understanding of these techniques and models. With the business entities keen on making data-driven decisions it is essential for individuals working in this uncertain environment to possess such skills to make better decisions backed by data.

Course Objectives:
1. To establish importance of logical reasoning in human inquiry.
2. To demonstrate data handling skills and summarize data with clarity.
3. To extend an understanding of application of relevant concepts of Statistics to a given business scenario.
4. To understand business problems and make decisions using appropriate statistical models and explain trends
5. To demonstrate the knowledge on the process of organizing a data and conduct statistical treatment.

Pedagogy: This course could be dealt using multiple pedagogies like interactive lecture, students' discussions, case studies and experiential learning.

Module – I: Measures of Central Tendency, Dispersion, Measures of Skewness and Kurtosis
Classification and tabulation of data, frequency distribution, diagrams and graphs, measure of central tendency- arithmetic mean, weighted arithmetic mean, median, mode, geometric mean and harmonic mean (theory only) and meaning of partition values- quartiles, deciles, percentiles, measures of dispersion - range, quartile deviation, mean deviation from mean and median, standard deviation and coefficient of variation. Skewness - meaning, difference between dispersion and skewness, Karl Pearson's and Bowley's measures of skewness, concept of kurtosis, types of kurtoses and importance.

Module – II: Correlation and Regression
Meaning, definition and use of correlation, covariance, scatter diagram, types of correlation, Karl Pearson's correlation coefficient, Spearman's Rank correlation coefficient, probable error. regression-meaning and utility of regression analysis, comparison between correlation and regression, regression lines –x on y, y on x, regression equations and regression coefficients. meaning,

Module – III: Probability and Probability distributions
Introduction to probability, basic concepts of probability- classical definition, addition and multiplication rules, probability distributions – binomial, poisson and normal distributions, expected value.

Module – IV: Introduction to Logic
Number series, coding decoding and odd man out series, direction sense test, seating arrangements – linear and circular, blood relations, arithmetic and geometric progressions, Inductive and deductive reasoning.
Practical Component:
Understanding basic concepts of statistics is possible by incorporating data sets from real life situations. In every unit one hour could be set aside to handle realistic data such as number of steps taken on a day, daily expenditures of students, air quality index in various months in various cities, stock prices etc. using EXCEL and make their interpretations. Students may make short presentations of their analysis to add to the learning experience.

Course Learning Outcomes:

On having completed this course student should be able to:

1. Demonstrate data handling skills with clarity and logical reasoning.
2. Outline the relevant concepts of Statistics to a given context/business scenario
3. Organize business data and conduct statistical treatment.
4. Evaluate and interpret data using appropriate statistical techniques.
5. Explain data trends using appropriate statistical models.

Readings: Textbooks (Latest Editions):

1. Levin R. I.& Rubin D. S. Statistics for Management. Delhi: Pearson.
2. Pillai & Bagavathi. Statistics, Theory and Practice, S Chand Publishing
3. SP Gupta. Statistical Methods, Sultan Chand and Sons
4. SC Gupta. Fundamentals of Statistics, Himalaya Publishing House
5. Sharma, Gupta, The Practice of Business Statistics, Khanna Publishing House.
6. Sharma J.K. Business Statistics, Vikas Publishing House

Reference Research Paper:

- Fildes, R., & Goodwin, P. (2007). Against your better judgment? How organizations can improve their use of management judgment in forecasting. Interfaces, 37(6), 570-576.
- Stanovich, K. E., & West, R. F. (2000). Individual differences in reasoning: Implications for the rationality debate? Behavioral and Brain Sciences, 23(5), 645-665.