Mahatma Gandhi University Kottayam

Programme	**BBA/ BBA (HONOURS) / BBA (HONOURS WITH RESEARCH)**
Course Name	Business Statistics and Logic
Type of Course	CORE COURSE
Course Code	MG1CCRBBA102
Course Level	**NA**
Course Summary	Quantitative Aptitude tests have been one of the key components in all competitive examsacrosstheglobeinrecentyears. Alltestsinclude suchaptitudeproblemsto assess a candidate's arithmetic precision, conceptual numerical ability, analytical ability and rational thinking applicability. Hence this courseon Business Statistics and Logic has been introduced as part of BBA programs. BusinessStatistics helpsustomake businessdecisionsunderuncertainties.Such decisions must be objective and unbiased and based on quantitative data. This necessitates an analysis of data using appropriatestatisticaltoolsandhence understanding of these techniques andmodels. With the business entities keenon makingdata-drivendecisionsitisessentialforindividualsworkinginthisuncertain 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 datahandling skills and summarize data with clarity. 3. To extend an understanding of application of relevant concepts of Statisticstoa given business scenario. 4. To understandbusinessproblemsandmakedecisionsusingappropriate statistical models and explain trends.

	5. Todemonstratetheknowledgeontheprocessoforganizingadataand conductstatistical treatment.					
Semester	One	Credits			4	Total Hours
Course Details	Learning Approach	Lecture	Tutorial	Practical	Others	
		4	0	0	0	4
Pre-requisites, if any	NA					

COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome	Learning Domains *	Annual PO No	MGU PO
1	Outline the relevant concepts of Statistics to a given context/business scenario	U	Y1-PO1	1
2	Demonstrate data handling skills with clarity and logical reasoning.	A	Y1-PO4	2
3	Organize business data and conduct statistical treatment.	A	Y1-PO3	1
4	Evaluate and interpret data using appropriate statistical techniques.	E, C	Y1-PO4	2
5	Explain data trends using appropriate statistical models	A	Y1-PO3	2
Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S), Interest (I) and Appreciation (Ap)				

COURSE CONTENT

Module	Course description	Hrs	CO No.
1	**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 theory only and harmonic mean-theory only, measures of dispersion - range, quartile		CO1, CO2

	deviation, mean deviation from mean and median, standard deviation and coefficient of variation. Concepts of Skewness and kurtoses and its importance.		
2	**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- theory only. 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.		CO2, CO3
3	**Probability and Probability distributions** Introduction to probability, basic concepts of probability- classical definition, addition and multiplication rules, probability distributions (theory only) – binomial, poisson and normal distributions.		CO3, CO4
4	**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.		CO4

Teaching andLearning Approach	**Classroom Procedure (Mode of transaction)** Thiscoursecouldbedealtusingmultiplepedagogieslikeinteractive lecture, students' discussions, case studies and experiential learning. *Note to instructor:* 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.
Assessment Types	**MODE OF ASSESSMENT** **A. Continuous Comprehensive Assessment (CCA)** (Maximum Marks: 30)

Sl. No	Component	Activity	Marks

1	Test (Best out of two)		15
2	Assignments (Individual/ Group)	Provided below	15
Total Marks			30

B. End Semester Evaluation (Maximum Marks: 70)

Sl. NO	Component	Activity	Max. Marks
2	Written Examination of 2 hours	Short answer of 2 mark each (from last two units)5 questions out of 8	2 X 5 = 10
		Short Essay -4 questions 5 marks each (out of 6 choices (problem and theory)	4 X5 = 20
		Essay Question: 2 questions of 20 marks each from a choice of 4 questions (problem and case study)	2X 20 = 40
Total Marks			70

Assignments

A. Using EXCEL and the statistical concepts studies in this course, students should anlayse any real-world data and interpret the results. Primary or Secondary data may be used for this purpose. For example, calculate mean, median, mode, standard deviation, and range of sales data from a local vendor or environmental indicators such as air quality index, water usage, or carbon emissions; finding out the correlation and regression coefficient with expenditure and income data from 50 students (5 marks) (group)

B. To understand and identify the skewness and kurtosis of a given dataset using real-life data. Choose a real-life dataset. This could be from sources such as:

- Public datasets available online (e.g., government databases)
- Data from a project at work or school.
- Personal data you have collected (e.g., daily step count, expenses).

Calculate basic statistics (mean, median, mode, standard deviation) of the chosen numerical variable.

Identify skewness and kurtosis and visualise data using histogram. Also overlay the normal distribution curve for comparison (4 marks) (individual).

Reference:

Textbooks (LatestEditions):

1. Levin R. I.& Rubin D. S. *StatisticsforManagement*. Delhi: Pearson.
2. Pillai & Bagavathi. *Statistics,TheoryandPractice,*S Chand Publishing.
3. SP Gupta. *StatisticalMethods*, 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.

ReferenceResearch Paper:

1. Fildes, R., &Goodwin, P.(2007). Against yourbetterjudgment? How organisations can improve their use of management judgment in forecasting. Interfaces, 37(6), 570-576.
2. Stanovich,K.E.,&West,R.F.(2000).Individualdifferencesinreasoning: Implicationsfortherationalitydebate?BehavioralandBrainSciences,23(5),645-665.

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