



Gyanmanjari
Innovative University

Course Syllabus

Gyanmanjari Institute of Commerce

Semester-7 (B.COM)

Subject: Business Statistics – BCOXX17403

Type of course: Major (Core)

Prerequisite: A basic understanding of mathematics, especially algebra and arithmetic, is important for studying statistics. Familiarity with logical thinking and data interpretation also helps in grasping statistical concepts effectively.

Rationale: Statistics relies on mathematical operations to analyze data, so a foundation in algebra and arithmetic ensures accurate calculations and problem-solving. Logical thinking and data interpretation skills help in understanding patterns, drawing conclusions, and making informed decisions from data.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks			Total Marks
CI	T	P		C	SEE	CCE	
			MSE			ALA	
4	0	0	4	100	30	70	200

Legends: CI-Classroom Instructions; T-Tutorial; P-Practical; C-Credit; SEE-Semester End Evaluation; MSE- Mid Semester Examination; V – Viva; CCE-Continuous and Comprehensive Evaluation ; ALA-Active Learning Activities.

4 Credits * 25 Marks = 100 Marks (each credit carries 25 Marks)

SEE 100 Marks will be converted into 50 Marks

CCE 100 Marks will be converted into 50 Marks

It is compulsory to pass in each individual component



Course Content:

Sr. No	Course content	Hrs.	% Weightage
1	Introduction to Statistics Introduction to Statistics, Statistics in Business, Types of data – (Nominal, Ordinal, Interval, Ratio.) Types of variables – (Dependent, independent, moderating, intervening, extraneous, Discrete / continuous.) Charts and Graphs. Descriptive Statistics: (Measure of central tendency – mean, median, quartile, mode (for Group and ungrouped data) Measure of variability – (Range, interquartile range, standard deviation, variance, coefficient of variation.)	15	25
2	Probability Distribution: Discrete distribution – (Binomial, Poisson. Continuous distribution - Uniform, normal.) Hypothesis testing: Types of hypothesis – (Research, statistical, substantive. Null and alternative hypothesis. One-tailed & Two-tailed test. Types of Error – Type I & Type II. Level of significance. Steps of hypothesis testing.)	15	25
3	Parametric Tests: Uni-variate tests: (Z-test, T-test) Bi-variate tests: (T-test – Paired and independent, Pearson's Correlation, Simple Linear Regression, One Way ANOVA)		25
4	Non-Parametric Tests: Uni-variate tests: (Chi-square goodness of fit for uniform distribution) Bi-variate tests: Spearman's Rank Correlation, Mann-Whitney U test, Wilcoxon Sign Paired Rank Test, Chi-square test of independence Multivariate: Kruskal-Wallis, Friedman's test.	15	25



Continuous Assessment:

Sr. No.	Active Learning Activities	Marks
1	Probability Case Study Faculty give real-life probability situations (e.g., business risk, weather prediction) for group discussion and solution. Write answers to all questions in a PDF file and upload them on the GMIU web portal.	10
2	Basic Graph Activity Faculty provide simple data and ask students to draw a bar graph or pie chart. Write answers to all questions in a PDF file and upload them to the GMIU web portal.	10
3	Mean, Median, Mode Practice Faculty give basic numerical problems to find mean, median, and mode. Write answers to all questions in a PDF file and upload them on GMIU web portal.	10
4	Short Case Discussion Faculty give small real-life examples (e.g., marks comparison of students) for discussion. Write answers to all questions in a PDF file and upload them on GMIU web portal.	10
5	Table Formation Task Faculty give raw data and ask students to arrange it in tabular form. Write answers to all questions in a PDF file and upload them on GMIU web portal.	10
6	Frequency Table Activity Faculty provide raw data and ask students to prepare a frequency table. Write answers to all questions in a PDF file and upload them to the GMIU web portal.	10
7	Attendance	10
Total		70



Suggested Specification table with Marks (Theory): 100

Distribution of Theory Marks (Revised Bloom's Taxonomy)						
Level	Remembrance (R)	Understanding (U)	Application (A)	Analyze (N)	Evaluate (E)	Create (C)
Weightage	20%	20%	30%	20%	10%	-

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from the above table.

Course Outcome:

After learning the course, the students should be able to:	
CO1	Explain the basic concepts of statistics, its importance in business, types of data and variables, and represent data using charts and graphs.
CO2	Apply descriptive statistical tools such as measures of central tendency and variability to analyze grouped and ungrouped data.
CO3	Understand probability distributions including discrete and continuous distributions to solve real-life problems.
CO4	Analyze hypothesis testing using appropriate steps, types of hypotheses, and interpretation of errors and significance levels.

Instructional Method:

The course delivery method will depend upon the requirement of the content and the needs of students. The teacher, in addition to conventional teaching methods by blackboard, may also use tools such as demonstrations, role play, Quiz, brainstorming, MOOCs, etc.

From the content, 10% of the topics are suggested for flipped-mode instruction. Students will use supplementary resources such as online videos, NPTEL/SWAYAM videos, and e-courses. The internal evaluation will be done on the basis of an Active Learning Assignment.

Practical/viva examination will be conducted at the end of semester for evaluation of the performance of students in the laboratory.



Reference Books:

- [1] Gupta, D. S. P., & Gupta, D. P. K. (2022). *Business Statistics & Business Mathematics*. Sultan Chand & Sons.
- [2] Gupta, S. C., & Kapoor, V. K. (2020). *Fundamentals of Mathematical Statistics*. Sultan Chand & Sons.
- [3] K.S. Kushwaha, & Kumar, R. (2020). *Basic Concepts In Statistics*. New India Publishing Agency.
- [4] Levin, R. I., Rubin, D. S., Sanjay Rastogi, & Siddiqui, M. H. (2013). *Statistics for management*. Delhi ; Chennai ; Chandigarh Pearson.

