



COURSE DATA SHEET

SEMESTER	I	BATCH	2026-2029
COURSE NAME	BUSINESS STATISTICS	COURSE CODE	26UMAGE1E06
COURSE UNITS	5	COURSE TYPE	GENERIC ELECTIVE-I
CONTACT HOURS (L-T-P)	4-2-0	CREDITS	4
OFFERED BY	MATHEMATICS	SHIFT-(I/II) Shift-I-8.15am - 12.50pm Shift-II-1.00pm to 5.30pm	I

COURSE OBJECTIVES	
1.	To teach students how to collect, organize, and display business data using tables and charts.
2.	To help students calculate and interpret averages and measures of data variation to analyze business performance.
3.	To train students to find relationships between variables and forecast future business trends using time-series analysis

COURSE OUTCOMES: On completion of the course the students will be able to...		
	CO Statement	Cognitive Level
CO1	Collect, clean, and present raw data using clear tables and charts (like bar diagrams and histograms).	K1-K4 (Understand and Apply)
CO2	Calculate and compare different types of averages (Mean, Median, Mode, GM, and HM) to find the center of a data set.	K1-K5 (Understand, Apply and Analyze)
CO3	Compute Range, Quartile Deviation, and Standard Deviation to measure how spread out or consistent the data is.	K1-K6 (Understand, Apply, Analyze and Evaluate)
CO4	Use correlation and linear regression tools to find relationships between two variables and make simple predictions.	K1-K6 (Understand, Apply, Analyze and Evaluate)
CO5	Analyze time-based data using moving averages and least squares to identify long-term business trends.	K1-K5 (Understand, Apply and Analyze)



SYLLABUS

UNIT	TOPICS	HOURS
1	Introduction to Statistics & Data Management Meaning, scope, and definitions of Statistics; Importance and limitations. Data Collection & Tabulation: Primary and secondary data collection methods; Classification of data; Formulation of frequency distributions. Data Presentation: Presentation of statistical data using tables, graphs, and diagrams (Bar diagrams, Pie charts and Histograms).	15
2	Measures of Central Tendency Mathematical Averages: Arithmetic Mean, Geometric Mean, and Harmonic Mean (Concepts and computation). Positional Averages: Median and Mode.	15
3	Measures of Variation Absolute Measures: Range, Quartile Deviation, and Standard Deviation. Relative Measures: Coefficients of Range, QD, and Coefficient of Variation (CV).	15
4	Correlation and Regression Analysis Correlation: Meaning and types; Scatter Diagram method; Karl Pearson's Coefficient of Linear Correlation; Spearman's Rank Correlation (including tied ranks). Regression: Meaning and distinction between correlation and regression; Derivation of Linear Regression Equations (Y on X and X on Y).	15
5	Time Series Analysis Introduction: Meaning, utility, and causes of variation in time series data. Models: Additive and Multiplicative models. Trend Determination: Semi-average method, Moving Average method, and Method of Least Squares (Linear trend only).	15
Note (if any)	Theory 20% Problems 80%	



TEXT/REFERENCE BOOKS/E - RESOURCES:

Text Books	1. S.P. Gupta, Statistical Methods (47th Revised Edition) Sultan Chand & Sons (2024) 2. Rajagopalan, S. P., & Sattanathan, R. (2025). Business Statistics and Operations Research. Chennai: Vijay Nicole Imprints Pvt. Ltd. 3. Dr.P.R.Vittal, (2024). Business Statistics and Operations Research. Chennai: Margham Publications.
Books For Reference	1. S.C. Gupta, Fundamentals of Statistics (8th Revised Edition) Himalaya Publishing House (2024 / 2025) 2. Dr. J.K. Sharma , Business Statistics (5th Edition) Vikas Publishing House (2024 / 2025) 3. Dr. P.R. Vittal, Business Statistics and Operations Research (Revised Syllabus Edition) Margham Publications (2024 / 2025) 4. Pillai, R.S.N. and Bagavathi, V., <i>Statistics</i>, S. Chand Publishing, New Delhi, 2020.
E-Learning Resources	1. https://www.mheducation.com/unitas/highered/sample-chapters/9781260239515.pdf 2. https://skyfox.co/wp-content/uploads/2020/08/A-comprehensive-guide-to-business-statistics.pdf 3. https://www.opentextbooks.org.hk/system/files/export/9/9418/pdf/Principles_of_Business_Statistics_9418.pdf 4. https://ddegjust.ac.in/Portal/Upload/MBA-102%20book.pdf

PEDAGOGY (TEACHING METHODOLOGY):

- Chalk and Talk
- Online Coaching
- LCD



- Assignment
- Seminar
- Quiz
- Group discussion
- Reference material and videos
- Web resources

CO – PO – PSO Mapping

COs	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3
CO1	3	1	2	3	2	1	3	2	2
CO2	3	2	1	3	2	1	3	3	2
CO3	3	2	1	3	2	2	3	3	2
CO4	3	3	3	3	3	1	3	3	3
CO5	3	2	3	3	3	1	3	3	3
Avg.	3.0	2.0	2.0	3.0	2.4	1.2	3.0	2.8	2.4

Strong - 3

Moderate -2

Weak -1

No Correlation-0



JUSTIFICATION OF CO-PO/PSO MAPPING			
CO	PO/PSO	Level of correlation	Justification
CO1	PO1	3	Collecting, cleaning, and presenting raw data builds fundamental domain knowledge, allowing students to apply basic statistical presentation techniques confidently.
	PO2	2	Visualizing data using tables and charts helps in appraising real-life situations and drawing initial logical conclusions.
	PO3	2	Effective representation of raw data aids in identifying and designing solutions for challenging social and organizational problems.
	PO4	2	Formulating structured tables and charts establishes the foundational thought process required for advanced data-centric studies.
	PO5	2	Data presentation is a core skill for continuous self-learning and adapting to dynamic reports in any specialized professional environment.
	PO6	1	Ethical and unbiased data collection practices cultivate basic self-regulation and intellectual honesty.
	PSO1	3	Directly addresses the fundamental concept of mathematical data handling and developing structural ideas from raw observations.
	PSO2	2	Provides foundational mathematical techniques of diagrammatic representation highly relevant in the global business environment.
	PSO3	2	Enhances primary analytical skills, improving employability and preparing candidates for data interpretation sections in competitive exams.
CO2	PO1	3	Mastery of calculates (Mean, Median, Mode, GM, HM) provides solid conceptual clarity to assertively present summary statistics of any dataset.
	PO2	3	Averages are fundamental tools to evaluate everyday metrics, summarize information, and draw balanced, logical conclusions.
	PO3	2	Finding the center of datasets helps analyze societal indices (like average income or life expectancy) to propose target solutions.



**SHRIMATHI DEVKUNVAR NANALAL BHATT
VAISHNAV COLLEGE FOR WOMEN (AUTONOMOUS)**
OWNED AND MANAGED BY CORK INDUSTRIES CHARITIES TRUST
(Affiliated to the University of Madras and Accredited with 'A+' Grade by NAAC)
Chromepet, Chennai - 600 044.

	PO4	2	Serves as a fundamental milestone in statistical logic, paving the way for advanced mathematical and analytical research studies.
	PO5	2	Fosters continuous learning as averages are dynamically applied across various commercial and scientific fields.
	PO6	1	Ensuring honest representation of central metrics without selectively reporting biased averages (e.g., Mean vs. Median) builds professional integrity.
	PSO1	3	Deepens the core mathematical understanding of central tendencies and their diverse theoretical applications.
	PSO2	3	Equips students with mathematical reasoning and analytical techniques demanded heavily in market research and corporate setups.
	PSO3	2	Highly essential for quantitative aptitude sections of competitive exams and developing logical business problem-solving skills.
CO3	PO1	3	Enables students to confidently evaluate data consistency and risk factors using Range, SD, and QD, showing strong domain expertise.
	PO2	2	Measuring volatility and spread allows students to appraise risks in real-life events and draw accurate logical conclusions.
	PO3	2	Assessing variance (e.g., income inequality or quality control anomalies) is vital for developing solutions for societal challenges.
	PO4	2	Statistical dispersion is a prerequisite concept for higher-level studies in probability, research, and econometrics.
	PO5	2	Prepares the learner to handle unstable, dynamic environmental and market data systematically throughout their career.
	PO6	1	Promotes ethical reporting of variations and data spread without manipulating risk indicators.
	PSO1	3	Solidifies the mathematical concepts of variability, deviations, and data distribution profiles.
	PSO2	3	Teaches standard mathematical techniques for quality control and risk assessment in global markets.
	PSO3	3	Vital for research designs, highly tested in higher-education entrance exams, and directly enhances computational employability.
CO4	PO1	3	Developing predictive models and identifying relationships using linear regression exhibits a high level of applied mathematical domain knowledge.
	PO2	3	Evaluating cause-effect dynamics between variables helps students make calculated, logical decisions in complex real-life scenarios.



**SHRIMATHI DEVKUNVAR NANALAL BHATT
VAISHNAV COLLEGE FOR WOMEN (AUTONOMOUS)**
OWNED AND MANAGED BY CORK INDUSTRIES CHARITIES TRUST
(Affiliated to the University of Madras and Accredited with 'A+' Grade by NAAC)
Chromepet, Chennai - 600 044.

	PO3	3	Crucial for designing data-backed solutions for societal issues, such as analyzing the relationship between education level and poverty rate.
	PO4	3	Bivariate analysis is a cornerstone of modern research methodologies, facilitating seamless higher studies in statistical sciences.
	PO5	3	Regression tools prepare students to adapt to dynamic, predictive, and data-driven corporate environments.
	PO6	1	Instills ethical responsibility by reminding students not to assume correlation implies causation, preventing misleading reports.
	PSO1	3	Applies algebra and coordinate geometry ideas to statistical relationships, strengthening fundamental conceptual synthesis.
	PSO2	3	Teaches high-demand statistical methods directly aligned with predictive analytics in the global financial and job market.
	PSO3	3	Fuels entrepreneurial thinking, research capacity, and high employability through predictive data analysis capabilities.
CO5	PO1	3	Mastering moving averages and least squares forecasting allows students to assertively present business projections with high confidence.
	PO2	3	Analyzing historical trends is highly critical to evaluating future business risks and making logical, long-term decisions.
	PO3	3	Trend analysis models help design long-range plans and solutions for societal issues like population growth or environmental decay.
	PO4	3	Time series modeling is an essential stepping-stone for advanced econometrics and financial forecasting studies.
	PO5	3	Equips students to monitor, adapt, and learn continuously in a highly dynamic, changing macroeconomic environment.
	PO6	1	Promotes moral and unbiased projections without artificially inflating or deflating future trend metrics.
	PSO1	2	Connects mathematical modeling curves and sequence-based mathematical patterns to practical problems.
	PSO2	3	Directly provides technical forecasting skills that meet the fluctuating demands of global commercial industries.
	PSO3	3	Promotes strong strategic planning, a highly sought-after skill for entrepreneurship, business planning, and quantitative research.