COURSE DATA SHEET

SEMESTER	**I**	**BATCH**	**2026-2029**
COURSE NAME	**BUSINESS MATHEMATICS AND STATISTICS**	**COURSE CODE**	**26UMAGE1E07**
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	**II**

COURSE OBJECTIVES	
1.	To introduce basic mathematical concepts used in everyday business situations
2.	To develop numerical and analytical skills required for financial decision making
3.	To familiarize students with data handling and interpretation techniques
4.	To enable students to apply statistical tools in real-life situations
5.	To promote quantitative reasoning and problem-solving skills

COURSE OUTCOMES: On completion of the course the students will be able to…

COs	**CO Statement**	**Cognitive Level**
CO1	Apply ratio, proportion, variation, indices and logarithms in business calculations.	**K1-K5 (Understand, Apply, Analyze and Evaluate)**
CO2	Solve problems involving interest, discount, progressions and annuities in financial transactions.	**K1-K5 (Understand, Apply, Analyze and Evaluate)**
CO3	Compute and interpret measures of central tendency for business data.	**K1-K5 (Understand, Apply, Analyze and Evaluate)**

CO4	Analyze the variability of data using appropriate measures of dispersion.	**K1-K5 (Understand, Apply, Analyze and Evaluate)**
CO5	Analyze relationships between variables using correlation and regression techniques.	K1-K5 (Understand, Apply, Analyze and Evaluate)

SYLLABUS

UNIT	TOPICS	HOURS
1	**Ratio and Logarithms** Ratio – Proportion – Direct and Inverse Variations – Indices and Laws of Indices – Logarithms – Common Logarithms – Problems involving Logarithms.	**15 Hrs.**
2	**Interest and Annuity** Banker's Discount – Simple Interest – Compound Interest – Arithmetic Progression – Geometric Progression – Harmonic Progression – Annuity: Meaning – Types of Annuity – Applications of Annuity	**15 Hrs.**
3	**Measures of Central Tendency** Meaning and Scope of Statistics – Collection and Classification of Data – Arithmetic Mean – Median – Mode – Quartiles – Applications of Measures of Central Tendency in Business.	**15 Hrs.**
4	**Measures of Dispersion** Meaning and Importance of Dispersion – Range – Quartile Deviation – Mean Deviation – Variance – Standard Deviation – Coefficient of Variation – Applications in Business Data Analysis.	**15 Hrs.**
5	**Correlation and Regression** Meaning and Types of Correlation – Scatter Diagram – Karl Pearson's Coefficient of Correlation – Spearman's Rank Correlation – Regression Lines – Regression Coefficients – Simple Applications in Business Forecasting	**15 Hrs.**
Note (if any)	.	

TEXT/REFERENCE BOOKS/E - RESOURCES:

Text Books	1.Sancheti, D.C. and Kapoor, V.K., *Business Mathematics*, Sultan Chand & Sons, New Delhi, 2021. 2.Vittal, P.R., *Business Mathematics and Statistics*, Margham Publications, Chennai, 2021. 3.Rajagopalan, S. P., & Sattanathan, R. (2025). Business Statistics and Operations Research. Chennai: Vijay Nicole Imprints Pvt. Ltd.
Books For Reference	1.Gupta, S.C., *Fundamentals of Statistics*, Himalaya Publishing House, Mumbai, 2021. 2.Aggarwal, B.M., *Business Mathematics and Statistics*, Ane Books Pvt. Ltd., New Delhi, 2019. 3.Gupta, S.P. and Gupta, Archana, *Business Statistics*, Sultan Chand & Sons, New Delhi, 2022. 4.Pillai, R.S.N. and Bagavathi, V., *Statistics*, S. Chand Publishing, New Delhi, 2020. 5.Jain, T.R. and Aggarwal, S.C., *Business Mathematics*, VK Global Publications, New Delhi, 2021.
E-Learning Resources	1.NPTEL Mathematics Courses 2.SWAYAM Online Courses 3.e-PG Pathshala Statistics Resources 4.Khan Academy Statistics and Probability 5.OpenStax Statistics Resources

PEDAGOGY(TEACHING METHODOLOGY):

- Chalk and Talk
- Online Coaching
- LCD

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

CO-PO AND CO-PSO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6		PSO1	PSO2	PSO3
CO1	3	2	1	2	1	1		3	1	2
CO2	3	2	2	2	1	1		3	1	2
CO3	2	3	2	2	2	1		2	3	2
CO4	2	3	3	2	2	1		2	3	2
CO5	2	3	3	2	2	1		2	3	3
Average (Use only filled in cells for calculation)	2	3	2	2	2	1		2	2	2

Correlation Level: 1-Low 2-Moderate 3-Strong

JUSTIFICATION OF CO-PO/PSO MAPPING			
CO	**PO/PSO**	**Level of correlation**	**Justification**
CO1	PO1	**3**	Applying ratio, proportion, indices and logarithms develops strong mathematical competence and domain knowledge required for business calculations.
	PO2	**2**	Enhances logical reasoning and analytical thinking in solving quantitative business problems.
	PO3	**1**	Provides basic quantitative skills that support solving simple business-related problems.
	PO4	**2**	Builds a strong mathematical foundation for advanced studies in business and commerce.
	PO5	**1**	Encourages continuous learning of quantitative techniques used in business practices.
	PO6	**1**	Promotes accuracy, discipline and ethical use of numerical computations.
	PSO1	**3**	Strengthens fundamental mathematical concepts essential for business applications.
	PSO2	**1**	Introduces mathematical techniques applicable to business situations.
	PSO3	**2**	Develops problem-solving ability useful for competitive examinations and employability.
CO2	PO1	**3**	Solving financial mathematics problems strengthens domain knowledge in business mathematics
	PO2	**2**	Develops analytical and logical decision-making skills in financial contexts.
	PO3	**2**	Enables students to solve practical financial problems using appropriate mathematical methods
	PO4	**2**	Provides a foundation for advanced financial and business studies.

	PO5	**1**	Encourages independent learning of financial computation techniques
	PO6	**1**	Promotes ethical financial calculations and responsible decision making.
	PSO1	**3**	Reinforces core mathematical principles applied in financial computations
	PSO2	**1**	Applies mathematical techniques to solve real-life business finance problems
	PSO3	**2**	Improves quantitative aptitude and employability skills in finance-related careers
CO3	PO1	**2**	Applies statistical concepts to summarize and interpret business data effectively.
	PO2	**3**	Develops strong analytical reasoning through interpretation of statistical measures.
	PO3	**2**	Supports data-based solutions for business decision-making
	PO4	**2**	Provides statistical foundations for higher studies and research
	PO5	**2**	Encourages lifelong learning through statistical data analysis skills
	PO6	**1**	Promotes ethical interpretation and reporting of business data.
	PSO1	**2**	Enhances understanding of fundamental statistical concepts.
	PSO2	**3**	Develops statistical techniques required for analyzing business information.
	PSO3	**2**	Strengthens analytical thinking for competitive examinations and professional practice
CO4	PO1	**2**	Applies measures of dispersion to evaluate business data accurately.
	PO2	**3**	Develops critical thinking by comparing variability in datasets
	PO3	**3**	Enables effective analysis of business data for informed decision-making
	PO4	**2**	Supports advanced learning in statistical analysis and research
	PO5	**2**	Promotes continuous learning of statistical applications in business
	PO6	**1**	Encourages responsible interpretation of statistical results
	PSO1	**2**	Strengthens knowledge of statistical measures and their applications
	PSO2	**3**	Develops competency in statistical techniques for business data analysis

	PSO3	**2**	Improves analytical and problem-solving skills useful in higher education and employment.
CO5	PO1	**2**	Applies correlation and regression techniques to analyze business relationships.
	PO2	**3**	Develops higher-order analytical and logical reasoning through statistical modelling.
	PO3	**3**	Enables prediction and solution of real-world business problems using statistical methods
	PO4	**2**	Supports advanced study in statistics, data analysis and research
	PO5	**2**	Encourages continuous learning of modern analytical techniques
	PO6	**1**	Promotes ethical interpretation of statistical relationships and predictions
	PSO1	**2**	Reinforces statistical concepts essential for mathematical competency
	PSO2	**3**	Develops expertise in statistical techniques and business forecasting methods
	PSO3	**3**	Enhances problem-solving, research aptitude and employability through data-driven analysis.