

BCOM- BUSINESS MATHEMATICS AND STATISTICS -LESSON PLAN

Hours	Unit	Chapter	Taxonomy Level	General Objective	Specific Objective	Pedagogy	Question Bank
2	I	Ratio and Proportion	Understanding	To define and compute ratios, proportions, and variations.	To articulate the definition of a ratio and its role in comparing quantities.	Lecture with examples and exercises	Articulate the definition of a ratio and its role in comparing quantities.
2	I	Ratio and Proportion	Application		To calculate ratios from given business data and simplify them to their lowest terms.	Practice problems from business cases	Calculate ratios from given business data and simplify them to their lowest terms.
2	I	Ratio and Proportion	Application		To find the missing term in a proportion and solve word problems involving proportional relationships.	Pair work on word problems	Find the missing term in a proportion and solve word problems involving proportional relationships.
2	I	Variation	Analysis		To distinguish between direct, inverse, and joint variation with relevant examples.	Concept comparison + business models	Distinguish between direct, inverse, and joint variation with relevant examples.
2	I	Indices	Application		To find the value of unknown variables in equations containing exponents.	Formula-based drill and demonstration	Find the value of unknown variables in equations containing exponents.
2	I	Logarithms	Understanding		To explain logarithms as the inverse operation of exponentiation.	Explanation with visual aids	Explain logarithms as the inverse operation of exponentiation.
2	II	Simple and Compound Interest	Understanding		To calculate the principal, rate, or time in simple interest problems when other variables are known.	Lecture with numerical examples	Calculate the principal, rate, or time in simple interest problems when other variables are known.
2	II	Compound Interest and Effective Rate	Application	To calculate compound interest for different compounding periods (annually, semi-annually, quarterly).		Problem-solving through tables and timelines	Calculate compound interest for different compounding periods (annually, semi-annually, quarterly).

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2	II	Banker's Discount and True Discount	Application	To calculate simple and compound interest using formulas.	To determine the effective rate of interest when compounding occurs more than once a year.	Lecture with commercial math examples	Determine the effective rate of interest when compounding occurs more than once a year.
2	II	Banker's Discount and True Discount	Application		To calculate the true discount and banker's gain on a bill of exchange.	Practice with financial instruments	Calculate the true discount and banker's gain on a bill of exchange.
2	II	Progressions	Understanding		To find the nth term and the sum of the first n terms of an Arithmetic Progression (AP).	Concept drill and exercises	Find the nth term and the sum of the first n terms of an Arithmetic Progression (AP).
2	II	Annuity and Time Value of Money	Application		To calculate equated monthly installments (EMIs) for loans using annuity formulas.	Real-life case-based learning	Calculate equated monthly installments (EMIs) for loans using annuity formulas.
3	III	Measures of Central Tendency	Understanding	To define and calculate mean, median, mode, geometric, and harmonic means.	To define the measures of central tendency: Arithmetic Mean, Median, Mode, Geometric Mean, and Harmonic Mean. To calculate Arithmetic Mean using the given raw data To calculate Arithmetic Mean using the given grouped data To calculate Arithmetic Mean using the given ungrouped data data	Interactive lecture with dataset examples	Define the measures of central tendency: Arithmetic Mean, Median, Mode, Geometric Mean, and Harmonic Mean. calculate Arithmetic Mean using the given raw data calculate Arithmetic Mean using the given grouped data calculate Arithmetic Mean using the given ungrouped data data
3	III	Measures of Central	Application		To calculate Median using the given raw data	Group activity using datasets	calculate Median using the given raw data

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		Tendency			<p>To calculate Median using the given grouped data</p> <p>To calculate Median using the given ungrouped data</p> <p>To calculate Mode using the given raw data</p> <p>To calculate Mode using the given grouped data</p> <p>To calculate Mode using the given ungrouped data</p>		<p>calculate Median using the given grouped data</p> <p>calculate Median using the given ungrouped data</p> <p>calculate Mode using the given raw data</p> <p>calculate Mode using the given grouped data</p> <p>calculate Mode using the given ungrouped data</p>
3	III	Measures of Central Tendency	Application		<p>To calculate Geometric Mean using the given raw data</p> <p>To calculate Geometric Mean using the given grouped data</p> <p>To calculate Harmonic Mean using the given raw data</p> <p>To calculate Harmonic Mean using the given grouped data</p>	Case analysis and example problems	<p>calculate Geometric Mean using the given raw data</p> <p>calculate Geometric Mean using the given grouped data</p> <p>calculate Harmonic Mean using the given raw data</p> <p>calculate Harmonic Mean using the given grouped data</p>
2	III	Measures of Dispersion	Application		To compute the standard deviation for both ungrouped and grouped data.	Solved examples and calculator use	Compute the standard deviation for both ungrouped and grouped data.
1	III	Measures of Dispersion	Evaluation		To list any six relationships between mean, median, and mode.	Data comparison activities	List any six relationships between mean, median, and mode.
2	IV	Correlation	Understanding		To list any eight key mathematical properties of the	Diagrammatic explanation	List any eight key mathematical properties of the

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				To define correlation and distinguish between its types.	correlation coefficient.	n and derivations	correlation coefficient.
2	IV	Correlation	Application		To compute Karl Pearson's and Spearman's correlation coefficients for the given data.	Numerical examples and data handling	Compute Karl Pearson's and Spearman's correlation coefficients for the given data.
2	IV	Correlation	Analysis		To visualize the relationship between two variables by drawing and interpreting a scatter diagram.	Graphical plotting using software or graph paper	Visualize the relationship between two variables by drawing and interpreting a scatter diagram.
2	IV	Regression	Understanding		To explain the purpose of regression analysis in predicting the value of a dependent variable.	Real data regression explanation	Explain the purpose of regression analysis in predicting the value of a dependent variable.
2	IV	Regression	Application		To formulate the regression equations using the method of least squares.	Numerical problem solving	Formulate the regression equations using the method of least squares.
2	IV	Regression	Evaluation		To use a calculated regression equation to estimate the value of a dependent variable.	Business case estimation problems	Use a calculated regression equation to estimate the value of a dependent variable.
2	V	Time Series	Understanding		To explain the importance of a time series for business forecasting.	Storyboarding + timeline graphs	Explain the importance of a time series for business forecasting.
2	V	Time Series	Application		To calculate trend values using the method of moving averages to smooth out fluctuations.	Step-by-step calculation and graphing	Calculate trend values using the method of moving averages to smooth out fluctuations.

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2	V	Time Series	Analysis	To explain the components of a time series: secular, seasonal, cyclical, and irregular variations.	To project future values by extrapolating a calculated trend line.	Practical data modeling	Project future values by extrapolating a calculated trend line.
2	V	Index Numbers	Understanding		To list any six between fixed and chain base index numbers.	Table-based examples and comparison	List any six between fixed and chain base index numbers.
2	V	Index Numbers	Application		To apply the Time Reversal Test and Factor Reversal Test to check the consistency of index number formulas.	Worked out formulas and interpretation	Apply the Time Reversal Test and Factor Reversal Test to check the consistency of index number formulas.
2	V	Index Numbers	Evaluation		To practice converting a fixed base index to a chain base index and vice-versa.	Hands-on worksheet conversion	convert a fixed base index to a chain base index and vice-versa.