BBA & BBA DM BUSINESS STATISTICS LESSON PLAN

Unit	Hours	Topic	K Level	Pedagogy	General Objective	Specific Objective	Question Bank
I	1	Introduction – Meaning and Definition of Statistics	K1	Interactive Lecture, Chalk & Talk	To enable students to understand basic statistical concepts and effectively summarize and present data using appropriate measures and graphical tools.	To define statistics and explain its role in business decision-making.	Define statistics and explain its role in business decision-making.
I	1	Collection and Tabulation of Statistical Data	K2	Example-based teaching, Real-life application discussion		To identify various methods for collecting primary and secondary statistical data.	Identify various methods for collecting primary and secondary statistical data.
I	1	Presentation of Statistical Data	K2	Lecture with visual examples, Class activity on raw data		To Organize raw data by creating a frequency distribution.	Organize raw data by creating a frequency distribution.
I	1	Graphs and Diagrams	K2, K3	Graph drawing activity, Hands-on sessions		To present the given data using tables. To present the given data using histograms. To present the given data using polygons. To present the given data using ogives.	present the given data using tables. present the given data using histograms. present the given data using polygons. present the given data using ogives.
I	1	Bar and Pie Charts	K2, K3	Chart drawing practice, Class quiz		To Create bar charts to represent the given data. To Create pie charts to represent the given data.	Create bar charts to represent the given data. Create pie charts to represent the given data.
I	1	Measures of Central Tendency – Introduction	K2	Lecture with examples		To Explain the purpose of measures of	Explain the purpose of measures of

						central tendency.	central tendency.
I	1	Arithmetic Mean	K3	Step-by-step problem solving		To Calculate the arithmetic mean for ungrouped and grouped data.	Calculate the arithmetic mean for ungrouped and grouped data.
I	1	Median	K3	Worksheet-based teaching		To Determine the median for different data types.	Determine the median for different data types.
I	1	Mode	K3	Group Activity		To Identify the mode in a given dataset.	Identify the mode in a given dataset.
I	1	Geometric Mean and Harmonic Mean	K3, K4	Use of business rate examples		To Calculate geometric mean and harmonic mean with applications.	Calculate geometric mean and harmonic mean with applications.
II	1	Measures of Variation – Introduction	K2	Discussion with practical examples	To equip students with the skills to measure variability in data and analyze relationships between variables using correlation and regression techniques.	To Explain the significance of measuring variation.	Explain the significance of measuring variation.
II	1	Quartile Deviation	K3	Numerical problems, Practice sheets		To Calculate quartile deviation from grouped and ungrouped data.	Calculate quartile deviation from grouped and ungrouped data.
II	1	Mean Deviation	K3	Step-by-step solving		To Calculate mean deviation from mean/median.	Calculate mean deviation from mean/median.
II	1	Standard Deviation and Variance	K3	Worked examples		To Compute standard deviation and variance.	Compute standard deviation and variance.
II	1	Coefficient of Variation	K3	Comparison-based teaching		To Use coefficient of variation to compare relative variability.	Use coefficient of variation to compare relative variability.

II	1	Skewness	K2, K3	Graphical explanation		To Define skewness and describe data shape.	Define skewness and describe data shape.
II	1	Kurtosis	K2	Lecture using charts		To Explain kurtosis and its business significance.	Explain kurtosis and its business significance.
II	1	Lorenz Curve	K2, K3	Diagram construction and interpretation		To Construct and interpret a Lorenz curve.	Construct and interpret a Lorenz curve.
II	1	Correlation – Scatter Diagram and Karl Pearson	K2, K3	Scatter plot activity, Spreadsheet analysis		To Create and interpret a scatter diagram; Calculate Karl Pearson's correlation.	Create and interpret a scatter diagram; Calculate Karl Pearson's correlation.
II	1	Rank Correlation and Regression	K3	Hands-on rank correlation and regression derivation		To Calculate Spearman’s rank correlation for given data; To Formulate linear regression equation.	Calculate Spearman’s rank correlation for given data; Formulate the linear regression equation.
III	1	Time Series – Introduction and Components	K1	Concept illustration using examples	To familiarize students with methods of analyzing time-dependent data and identifying trends and seasonal patterns.	To Define time series and identify its components.	Define time series and identify its components.
III	1	Additive and Multiplicative Models	K2	Compare real datasets with both models		To list any six difference between additive and multiplicative models.	List any six difference between additive and multiplicative models.
III	1	Secular Trend	K2	Lecture, Diagram demonstration		To Describe the purpose of measuring secular trend.	Describe the purpose of measuring secular trend.
III	1	Moving Averages	K3	Manual and software-based moving averages		To Apply method of moving averages to identify trend.	Apply method of moving averages to identify trend.

III	1	Least Squares Method	K3	Equation derivation and plotting		To Employ method of least squares to fit linear trend line.	Employ method of least squares to fit linear trend line.
III	1	Forecasting using Trend Equation	K3	Real-time forecasting example		To Use trend equation to make future forecasts.	Use trend equation to make future forecasts.
III	1	Seasonal Variations – Introduction	K2	Classroom discussion and seasonality demo		To Explain purpose of measuring seasonal variations.	Explain purpose of measuring seasonal variations.
III	1	Seasonal Indices – Averages Method	K3	Hands-on calculations		To Calculate seasonal indices using simple averages.	Calculate seasonal indices using simple averages.
III	1	Seasonal Indices – Ratio Methods	K3	Excel-based ratio method practice		To Calculate seasonal indices using ratio-to-moving-average and ratio-to-trend methods.	Calculate seasonal indices using ratio-to-moving-average and ratio-to-trend methods.
III	1	Deseasonalizing and Interpreting	K4	Interpretation and decision-making scenarios		To Deseasonalize the given data; To Interpret seasonal indices.	Deseasonalize the given data; Interpret seasonal indices.
IV	1	Index Numbers – Definition and Uses	K1, K2	Case-based explanation	To help students understand and compute various index numbers and their applications in measuring economic indicators.	To Define index number and explain its uses.	Define index number and explain its uses.
IV	1	Issues in Construction	K2	Discussion of real-world issues		To Identify key challenges in constructing index numbers.	Identify key challenges in constructing index numbers.
IV	1	Unweighted vs Weighted Index	K2, K3	Table comparison, problem solving		To List five differences between unweighted	List five differences between unweighted and

						and weighted indices.	weighted indices.
IV	1	Laspeyres' Method	K3	Numerical application		To Calculate weighted price index using Laspeyres' method.	Calculate weighted price index using Laspeyres' method.
IV	1	Paasche's Method	K3	Practice problems		To Calculate weighted price index using Paasche's method.	Calculate weighted price index using Paasche's method.
IV	1	Fisher's Ideal Index	K4	Comparative teaching		To Calculate Fisher's Ideal Index and explain why it's ideal.	Calculate Fisher's Ideal Index and explain why it's ideal.
IV	1	Time and Factor Reversal Tests	K3	Theory + Illustration		To Apply time reversal and factor reversal tests for given data.	Apply time reversal and factor reversal tests for given data set.
IV	1	Consumer Price Index – Definition	K2	Economic interpretation		To Define and construct a consumer price index (CPI).	Define and construct a consumer price index (CPI).
IV	1	Cost of Living Index (COLI) Methods	K3	Worked example using family budget		To Explain COLI; To Calculate CPI using Aggregate Expenditure and Family Budget methods.	Explain COLI; Calculate CPI using Aggregate Expenditure and Family Budget methods.
IV	1	Base Period and Interpretation	K3	Base change demo with charts		To Explain base shifting and interpret changes in CPI.	Explain base shifting and interpret changes in CPI.
V	1	Hypothesis – Null and Alternative	K1, K2	Conceptual overview with example cases		To Define statistical hypothesis (H_o and H_1).	Define statistical hypothesis (H_o and H_1).

V	1	Type I and Type II Errors	K2	Probability-based discussion	To introduce students to basic inferential statistics and enable them to test hypotheses using standard statistical tests.	To Explain Type I and Type II errors.	Explain Type I and Type II errors.
V	1	Hypothesis Testing Steps	K2	Process walkthrough		To Outline five-step procedure for hypothesis testing.	Outline five-step procedure for hypothesis testing.
V	1	One-tailed vs Two-tailed	K2	Visual illustration		To List five differences between one-tailed and two-tailed tests.	List five differences between one-tailed and two-tailed tests.
V	1	Chi-Square Distribution	K2	Lecture + Conceptual examples		To Understand properties and applications of Chi-square.	Understand properties and applications of Chi-square.
V	1	Chi-Square Test – Goodness of Fit	K3	Real dataset comparison		To Perform Chi-square test for goodness of fit.	Perform Chi-square test for goodness of fit.
V	1	Chi-Square Test – Independence	K3	Contingency table examples		To Conduct Chi-square test for independence.	Conduct Chi-square test for independence.
V	1	t-Distribution and t-Test	K3	One and two-sample problems		To List six properties of t-distribution; To Conduct one-sample and independent t-tests.	List six properties of t-distribution; Conduct one-sample and independent t-tests.
V	1	Paired t-Test and F-Distribution	K3	Paired testing with case data		To Conduct paired samples t-test; To List eight properties of F-distribution.	Conduct paired samples t-test; List eight properties of F-distribution.
V	1	ANOVA and Test Interpretation	K4	Practical ANOVA analysis		To Explain purpose of ANOVA; To Perform one-way ANOVA; Interpret	Explain purpose of ANOVA; Perform one-way ANOVA; Interpret results

						results of Chi-square, t-, and F-tests.	of Chi-square, t-, and F-tests.