

St. Joseph's College of Commerce (Autonomous)
#163, Brigade Road, Bengaluru - 560 025

LESSON PLAN (MODULE WISE)

PROGRAM: B.Com (Analytics)

SEMESTER: II

SUBJECT & CODE: C5 18 MC 203: STATISTICS

Lecture Hours: 60

OBJECTIVE:

This course would help the students to collect the data and streamlining and how effectively the data is been segregated and used in order to take appropriate decisions at the right time with the effective usage of the statistical tools.

Sl. No	UNIT & OBJECTIVES	No. of Lecture Hours	Methodology/ Instructional Techniques	Evaluation/ Learning Confirmation
MODULE 1	<u>INTRODUCTION</u> Objective: To understand the meaning, functions, importance, and limitation of statistics, classification, data collection methods, sampling and preparation of frequency and data tabulation.	Total 5		
1.	Meaning and Functions of Statistics -Importance of statistics -	1	Lecture	Question and Answer/ Quiz
2.	Classification of data into primary and secondary - Limitation of Statistics.	1	Lecture	Question and Answer
3.	Data Collection Methods - Sampling techniques	1	Lecture	Question and Answer
4.	Preparation of frequency distribution and data tabulation.	2	Lecture, and Problem Solving	Question and Answer
MODULE 2	<u>DATA AND ANALYSIS</u> Objective: To understand the basic concepts of data and analysis, population,	Total		

	sample, variables, attributes, scales and problems on measures of central tendency and graphical representation of data.	9		
1.	Population - Sample - Types of data - Primary and Secondary data - Qualitative-Quantitative - Cross Sectional - Time series	1	Lecture	Question and Answer/ Quiz
2.	Variables and Attributes - Discrete and Continuous variables. Types of scales - nominal, ordinal, ratio and interval.	1	Lecture	Question and Answer
3.	Meaning of central tendency - Definition - Types of averages - Arithmetic Mean (Simple and weighted).	3	Lecture, and Problem - Solving	Question and Answer/ Test
4.	Median - Mode (excluding missing frequency problems).	2	Lecture, and Problem - Solving	Question and Answer
5.	Graphical representation of median and mode. Ogive - curve; Histogram - Smoothed Frequency curve - Frequency polygon.	2	Case Study, Lecture, Problems and Solutions	Question and Answer/ Assignment
MODULE 3	<u>MEASURES OF DISPERSION & SKEWNESS</u> Objective: To understand the properties of dispersion and application of skewness and kurtosis measures in data analysis.	Total 10		
1.	Meaning - Definitions - Properties of dispersion - Range.	1	Lecture	Question and Answer
2.	Quartile Deviation - Mean Deviation from mean and median.	2	Lecture, and Problem - Solving	Question and Answer
3.	Standard Deviation - Coefficient of variation.	3	Lecture, and Problem - Solving	Question and Answer
4.	Skewness - Meaning - Difference between Dispersion and Skewness - Karl Pearson's and Bowley's measures of Skewness.	3	Lecture, Case Study, and	Question and Answer/ Test

			Problem - Solving	
5.	Kurtosis and its measures.	1	Lecture, and Discussion	Question and Answer
MODULE 4	<p style="text-align: center;"><u>CORRELATION AND REGRESSION ANALYSIS</u></p> <p>Objective: To understand the concept of correlation and regression analysis and its application in business decision - making.</p>	Total 15		
1.	Meaning - Definition - Use of correlation - Scatter diagram - Types of correlation.	1	Lecture, and Discussion	Question and Answer
2.	Karl Pearson's correlation coefficient - Spearman's Rank correlation - Probable error.	5	Lecture, and Discussion	Question and Answer
3.	Regression - Meaning and utility of Regression Analysis - Regression lines -X on Y- Yon X.	5	Lecture, and Discussion	Question and Answer
4.	Multiple Linear Regression - Fitting multiple linear regression models of the form $Y=a+bx+cz$ (involving two regressions) - Prediction - Regression coefficients and coefficient of determination.	4	Lecture, and Discussion (Practical)	Question and Answer/Test
MODULE 5	<p style="text-align: center;"><u>INDEX NUMBERS AND TIME SERIES</u></p> <p>Objective: To understand the meanings of index numbers and time series analysis and its application in business decision-making.</p>	Total 9		
1.	Meaning & Definition - Uses - Classification - Construction of Index Numbers - Methods of constructing Index Numbers.	1	Lecture, and Discussions	Question and Answer
2.	Simple Aggregative Method - Simple Average of Price Relative Method -	4	Lecture, and Discussions	Question and Answer

	Weighted index method - Consumer Price Index			
3.	Time Series - Meaning and Definition - Analytical Meaning, components of time series,	1	Lecture, and Problem - Solving	Question and Answer
4.	Estimation of Secular Trend-Moving Average method (2, 3, 4 & 5 years) and method of Least squares.	3	Lecture, and Problem - Solving	Question and Answer / Test
MODULE 6	<p style="text-align: center;"><u>PROBABILITY THEORY & CLASSIFICATION</u></p> <p>Objective: To understand the basic concept of probability theory and its classification. To understand the concept of decision tree and its application in business decision-making.</p>	Total 12		
1.	Permutation and Combination (simple problems),	2	Lecture and Discussions	Question and Answer
2.	Classical or mathematical definition of probability, Random experiment, Equally likely outcomes, Sample space, mutually exclusive events, compliment of an event, dependent and independent events.	5	Lecture, and Problem - Solving	Question and Answer
3.	Conditional probability.	2	Lecture, and Problem - Solving	Question and Answer/Test /MCQ
4.	Basic concepts - Decision Tree Induction - Model Evaluation and Selection.	3	Lecture, and Problem - Solving	Question and Answer

BOOKS FOR REFERENCE:

- ❖ Croxton F.E, Cowden D.J and Kelin S (1973): *Applied General Statistics.*, PHI.
- ❖ Freund JE and Walpole RE (1987) *Mathematical Statistics (4th edition)* PHI.
- ❖ Goon A.M., Gupta M.K., Das Gupta.B. (1991): *Fundamentals of Statistics Vol.I*, World Press, Calcutta.
- ❖ Gupta, S.C., and V.K.Kapoor (2001): *Fundamentals of Mathematical Statistics: Sultan Chand & Sons.*
- ❖ Medhi J (1992): *Statistical Methods: An introductory text. New Age.*
- ❖ Veerarajan T: *Probability , Statistics and Random process (Tata McGran Hill)*
- ❖ J K Sharma(2007),*Business Statistics(Pearson Education India)*
- ❖ Naval Bajpai(2009), *Business Statistics(Pearson Education India)*
- ❖ Anderson T.W. and Sclove S.L (1978) *An Introduction to the*
- ❖ *Statistical Analysis of Data, Houghton Mifflin& Co.*
- ❖ Cooke, Cramer and Clarke: *Basic Statistical Computing, Chapman and Hall.*
- ❖ Mood A.M. Graybill F.A. and Boes D.C. (1974): *Introduction to the Theory of Statistics, McGraw Hill.*
- ❖ Snedecor G.W. and Cochran W.G. (1967): *Statistical Methods. Iowa State University Press.*
- ❖ Spiegel, M.R. (1967): *Theory & Problems of Statistics, Schaum's Publishing Series.*
- ❖ KVS Sarma, *Statistics Made Simple: Do it yourself on PC (PHI)*
- ❖ Purohit S.G. et.al. *Statistics using R:*
- ❖ John Verzani (2005): *Using R for Introductory Statistics, CHAPMAN & HALL/CRC*

PROBABLE DATES & NATURE OF CIA:

1. First CIA (10 marks): Between November 28th – December 5th, 2018 – MCQ test on Moodles.
2. Mid Term Exams (20 marks): January third week, 2019.
3. Second CIA (10 marks): Between February 20th - 28th, 2019 – Assignment/Project.

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