<u>Session Plan</u>

ST. JOSEPH'S COLLEGE OF COMMERCE, (AUTONOMOUS)
163, BRIGADE ROAD, BANGALORE 560025.

<u>PG DEPARTMENT</u>

Objectives:

The course facilities the students to develop and hone statistical skills for managerial decision making.

Course Name: M.Com (IB)

Subject: Mathematics & Statistics for Managers

Semester: I

Faculty: Poornima V

Module Number	Session No.	Topic	Pre- Class Activity	Pedagogy (in class)	Out of Class Assignment
I		**Mathematical Basis for Managerial Decision-Making**			
	1.	Functions, Linear	Understanding Different Types of Functions and Equations	Lecture, Problems and Solutions	Practice more problems (Worksheet/ Refer different text books)

	2.	Differentiation	Understanding Standard Formulas, Rules & Law of Indices	Lecture, Problems and Solutions	Practice more problems (Worksheet/ Refer different text books)
	3.	Maxima & Minima Emphasis on Cost and Revenue Functions	Understanding the application and relevance in business	Lecture, Problems and Solutions	Practice more problems (Worksheet/ Refer different text books)
	4.	Ratio and Proportion	Understanding the Difference between Ratio and Proportion	Lecture, Problems and Solutions	Practice more problems (Worksheet/ Refer different text books)
II		**Business Statistics and Scope**			
	1.	Application of Statistics in Managerial Decision-Making and Definition of Statistics	Understanding the origin, importance, limitations of statistics	Lecture, Discussions & Presentation	Read on statistical investigation /enquiry

	2.	Measures of Central Tendency (interpretation and business application)	Understanding the different measures of central tendencies and prepare a chart with formulas for Mean, Median & Mode	Lecture, Problems & Solutions/solving through MS Excel	Practice more problems (Worksheet/ Refer different text books)
	3.	Measures of Dispersion (interpretation and business application)	Understanding the different measures of dispersion and prepare a chart with formulas for absolute and relative measures	Lecture, Problems & Solutions/ solving through MS Excel	Practice more problems (Worksheet/ Refer different text books)
	4.	Skewness and Kurtosis (interpretation and business application)	Understanding the relevance in decision-making	Lecture, Problems & Solutions	Practice more problems (Worksheet/ Refer different text books)
III		**Probability Theory**			
	1.	Meaning, Importance, Random Variable, Expectation and Variance of random variable	Practice on basics of probability problems	Lecture, Discussions, Problems & Solutions	Practice more problems (Worksheet/ Refer different text books)

	2.	Theorems of Probability, Conditional Probability and Joint Probability	Understanding the origin and concept of probability theory	Lecture, Discussions, Problems & Solutions	Practice more problems (Worksheet/ Refer different text books)
	3.	Baye's Theorem	Understanding the concept and relevance in business	Lecture, Problems & Solutions	Practice more problems (Worksheet/ Refer different text books)
	4.	Probability Distributions – Binomial, Poisson, Normal and Exponential	Understanding the origin and relevance in business	Lecture, Discussions, Problems & Solutions	Practice more problems (Worksheet/ Refer different text books)
IV		**Decision Theory**			
	1.	Decision Tree	Understanding the meaning, importance, need in business decision-making	Lecture, Discussions, Problems & Solutions	Practice more problems (Worksheet/ Refer different text books)

	2.	Decision-making under certainty, uncertainty and risk	Understanding the different types of decision-making environments	Lecture, Discussions, Problems & Solutions	Practice more problems (Worksheet/ Refer different text books)
	3.	Bayesian Approach	Understanding the relevance of Bayesian approach in decision-making	Lecture, Problems & Solutions	Practice more problems (Worksheet/ Refer different text books)
V		**Correlation Analysis**			
	1.	Methods of Correlation Analysis and Lag and Lead in Correlation	Understanding the meaning, basics, importance of correlation tool in decision-making	Lecture, Problems & Solutions	Practice more problems (Worksheet/ Refer different text books)
	2.	Multiple Correlation	Understanding the concept	Discussions, Hands on SPSS & solving problems with data sets	Read research articles relating to application of multiple regression for analysis

	3.	Regression Analysis –linear	Understanding the meaning, methods, importance of regression tool in decision -making	Lecture, Problems & Solutions	Practice more problems (Worksheet/ Refer different text books)
	4.	Introduction to regression model building and multiple regression	Understanding the relevance of model building	Discussions, Hands on SPSS and solving problems with data sets	Read research articles relating to application of multiple regression for analysis
VI		**Index Numbers and Time Series**			
	1.	Index Numbers construction and application	Understanding the meaning, importance of index numbers	Lecture, Problems and Solutions	Practice more problems (Worksheet/ Refer different text books)
	2.	Tests of Consistency	Prepare a chart with all formulas of price and quantity index numbers given by different statisticians	Lecture, Problems and Solutions	Practice more problems (Worksheet/ Refer different text books)

3.	Introduction to Time Series	Understanding the origin, concept and components of time series	Lecture, Discussions & Presentation	Read research articles relating to application of time series tool for analysis
4.	Secular Trend and Applications	Understanding the Different Methods of Time Series Analysis	Lecture, Discussions, Problems and Solutions	Practice more problems (Worksheet/ Refer different text books)

BOOKS FOR REFERENCE

1. *Mittal, Sathyaprasad and Pradeep Rao, Mathematics and Statistics for Management, HPH*
2. *Azel and Sounderpandian, Complete Business Statistics, TMH*
3. *JK Sharma, Business Statistics, Pearson*
4. *RS Bhardwaj, Mathematics for Economics and Business, EB*
5. *RP Hooda, Statistics for Business and Economics, McMillan*
6. *GC Beri, Business Statistics, TMH*
7. *BR Dey, Managerial Statistics, McMillan*

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