Gokhale Education Society's
Dr. TK Tope Arts & Commerce Night College, Parel, Mumbai – 12
ACADEMIC TEACHING PLAN: 2022 – 2023

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1. Name of the Teacher : Sandeep Sudam Kajabe
2. Subject : Mathematical and Statistical Techniques-I & II
3. Class : F.Y.B. Com Div- A and B
4. Semester : I & II

No. of Lectures	Title of the Topic/Portion to be covered	Remarks
	SEMESTER –I	
June 2022	Admission Process	
July 2022	Average, types of averages, arithmetic mean, median and mode. Quartiles, Deciles and percentiles. Location of median and quartiles. Using histogram locate mode. Concept and idea of dispersion, various measures range, quartile deviation, mean deviation, standard deviation, variance, combined variance.	
August 2022	Concept of share, face value, dividend, equity shares, preferential shares, bonus shares. Problems on net income after considering entry load, dividend, change in Net Asset Value and exit load, averaging of price under the systematic investment plan. Factorial Notation, Fundamental principle of counting, permutation as arrangement, combination as selection, relation between n_{C_r} and n_{P_r}.	
September 2022	Sketching of graphs of linear equation Ax + By = C = 0, linear inequalities, Mathematical formulation of linear programming problems, solution of L.P.P. using graphical method. Concept of random experiment/trial and possible outcomes, sample space and discrete sample space, Algebra of events, Mutually Exclusive and Exhaustive events,.	
October 2022	Complimentary events. Addition and multiplication theorem and Random Variable. Decision making process, decision making under uncertainty, maximin, maximax, minimax regret and laplace criteria, formulation of pay-off matrix, Expected monetary value, decision tree, expected opportunity loss, examples on EMV and EOL.	
November 2022	**Examination**	
	SEMESTER –II	
Dec 2022	Concept of real function and some examples. Demand, supply, total revenue, average revenue, total cost, average cost and profit function. Derivative of function, rules of derivatives, multiplication, sum, difference, quotient. Application: Marginal cost, marginal revenue, elasticity of demand, maxima and minima of functions.	

January 2023	Interest: Simple interest, compound interest. Annuity: Immediate and its present value, future value. Stated and effective annual rate. Installments using reduced balance method. Correlation analysis: Types of correlation, determination of correlation, scatter diagram, Karl Pearson's method of correlation coefficient and Spearman's rank correlation coefficient	
February 2023	Regression coefficients, relation between correlation coefficients and regression coefficients. Finding the equations of regression lines by method of least squares. Time series: Concepts and components of a time series. Representation of trend by free hand curve method, estimation of trend using moving average method and least square method, estimation of seasonal components.	
March 2023	Index numbers: Concepts and usage of index numbers, types of index numbers, Aggregative and relative index numbers, Laspery's, Passche's, Dorbisch-Bowley's, Marshall-Edgeworth and Fishers ideal index number. Chain base index numbers, cost of living index number. Probabilty Theory: Discrete probability Distribution: Binomial, Poisson. Continuous Probability Distribution: Normal Distribution.	
April 2023	**Examination**	