Topic	Learning outcomes	Innovative/Art Integration/Experiential Learning/Inter Disciplinary
Numbers,Quantification and numerical applications	Students will be able to • Apply arithmetic operations • enlist simple arithmetic functions • apply the rule of alligation and mixture • determine the mean price of mixture • determine the time taken by two or more piped to fill or empty the tank • describe the basic concepts of numerical applications	**Art Integration**:Figures and computer **Experiential learning:** A project on Prime numbers and divisibility rules.
Algebra	Students will be able to • Understand and use concept of matrix and related terms • Differentiate between types of matrices • Understand and use concept of determinants • Solve the system of linear equations by using Cramer's Rule and matrix method • Apply concept of matrices and determinants to formulate and solve real life situations.	**Experiential learning:** Evolves the idea of matrices as a way of representing and simplifying mathematical concepts. **Art Integration**:Figures and computer
Differentiation and its Applications	Students will be able to • Find derivatives of implicit functions,parametric functions • find second order derivative • define cost and revenue function • define marginal cost and marginal revenue • find values of local maxima and local minima at apoint • determine the condition for increasing and decreasing functions • apply derivatives in real life problems	**Experiential learning:** Demonstrates ways to relate differentiability and continuity of a function with each other. To establish a relationship between common logarithm (to the base 10) and natural logarithm (to the base e) of the number x.
Integration and its Applications	Students will be able to • define the terms anti derivative and indefinite integrals • find integrals of simple algebraic functions by substitution,partial fractions and by parts • apply properties of definite integrals • Develops the processes in Integral calculus based on the ideas of differential calculus learnt earlier • . Problem of finding function when where derivative is given • apply definite integrals to find consumer surplus and producers surplus	**Experiential learning:** To evaluate the definite integral as the limit of a sum and verify it by actual integration. **Art Integration**:Figures and computer
Differential equations	Students will be able to • determine order and degree of differential equation	**Experiential learning:** Formation of differential equation to explain the process

	• form differential equations y removing arbitrary constants	of cooling of boiled water to a given room temperature.
Probability Distributions	Students will be able to • understand the concept of random variable • write probability distribution of discrete random variable • understand and apply concept of Binomial distribution • understand and apply concept of Poisson distribution • understand and apply concept of Normal distribution	**Experiential learning** :Prediction of monsoon from past data. Predicting mortality of infants
Inferential Statistics	Students will be able to • develop an understanding of population and sample • understands the concept of parameter and statistical inference • understands the idea of hypothesis testing • use and extend the knowledge of inferential statistics and their applications in real life situations.	**Experiential learning** : Collect information of Vehicle registration data and correlating with pollution and number of accidents
Time -based Data	Students will be able to • familiarize with the characteristics and components of time series • analysis time series for univariate data • learn to compute and review trend analysis by method of moving averages • learn to compute straight line trend analysis by using least squares method.	**Experiential learning** : Analysis of a career graph of asports person. Conclude tghe best year of his/her career.
Financial Mathematics	Students will be able to • explain the concept of perpetuity and sinking fund • Calculate EMI using various methods • understand the concept of CAGR • Differentiate between CAGR and Annual growth rate • define the concept of linear method of depreciation • calculate depreciation using linear method of depreciation	**Experiential learning** : Project on Risk assessments by insurance firms from data
Linear Programming Problems	Students will be able to • understand the concept of LPP • Know the mathematical formulation of LPP • Distinguish between feasible solution and optimal solution • Find optimal solution of LPP by graphical method • Know the meaning of optimisation	**Experiential learning** : To minimize the cost of the food, meeting the dietary requirements of the staple food of the adolescent students of your school. **Art Integration**:Figures and computer and graphs