Curriculum
Subject- Applied Mathematics(241)
Class – XI
Session – 2025-26

Month	April	May	June	July
Concepts	**Ch.1** Sets **Ch.2** Relations	**Ch.3** Sequence and Series **Ch.4** Permutation and Combination **Ch.5** Probability	**Ch.6** Data Interpretation	**Ch.7** Financial Mathematics
Learning Outcomes	**Students will be able to** ● Define sets as a well-defined collection of objects. ● Represent a set in Roster form and Set builder form. ● Identify different types of sets on the basis of the number of elements in the set. ● Differentiate between equal set and equivalence set. ● Define and enlist subsets, power set of a set. ● Express subset of real numbers as intervals. ● Apply the concept of Venn diagrams to Describe the relationship between sets. ● Explain the significance of specific arrangement of elements in a pair. ● Write a Cartesian product of two sets. ● Find the number of elements in a Cartesian product of two sets. ● Express relation as a subset of Cartesian product. ● Find the domain and range of a relation.	**Students will be able to** ● Differentiate between sequence and series. ● Identify Arithmetic Progression (AP). ● Establish the formulae of finding n^{th} term and sum of n terms. ● Solve application problems based on AP. ● Find arithmetic mean (AM) of two positive numbers. ● Identify Geometric Progression (GP). ● Derive the nth term and sum of n terms of a given GP. ● Solve problems based on applications of GP. ● Find the geometric mean (GM) of two positive numbers. ● Solve problems based on relation between AM and GM. ● Apply appropriate formulas of AP and GP to solve application problems. ● Define the factorial of a number and its calculation. ● Fundamental Principle of Counting. ● Define permutation. ● Apply the concept of permutation to solve simple problems. ● Define combination. ● Differentiate between permutation and combination. ● Apply the formula of combination to solve the related problems. ● Define random experiment and sample	**Students will be able to** ● Describe the meaning of dispersion in a data set. ● Differentiate between range, quartile deviation, mean deviation and standard deviation. ● Calculate range, quartile deviation, mean deviation and standard deviation for ungrouped and grouped data set. ● Choose appropriate measures of dispersion to calculate spread of data. ● Define Skewness and Kurtosis using graphical. ● Representation of a data set. ● Interpret Skewness and Kurtosis of a frequency distribution by plotting the graph. ● Calculate coefficient of Skewness and interpret the results. ● Define Percentile rank and Quartile rank. ● Calculate and interpret Percentile and Quartile rank of scores in a given data set.	**Students will be able to** ● Define the concept of Interest Rates. ● Compare the difference between Nominal Interest Rate, Effective Rate and Real Interest Rate. ● Interpret the concept of simple and compound interest. ● Calculate Simple Interest and Compound Interest. ● Explain the meaning, nature and concept of equivalency. ● Analyze various examples for understanding annual equivalent rate. ● Define with examples the concept of effective rate of interest. ● Interpret the concept of compounding and discounting along with practical applications. ● Compute net present value and apply net present value in capital budgeting decisions. ● Explain the concept of Immediate Annuity, Annuity due and Deferred Annuity. ● Calculate General Annuity. ● Calculate the future value of regular annuity, annuity due. ● Apply the concept of Annuity in real life situations. ● Explain fundamentals of taxation. ● Differentiate between Direct and indirect tax. ● Define and explain GST. ● Calculate GST and Explain rules under State Goods and Services Tax (SGST)

		space with suitable examples. ● Recognize and differentiate different types of events and find their probabilities. ● Define the concept of conditional probability. ● Apply reasoning skills to solve problems based on conditional probability. ● State Bayes' theorem and solve practical problems based on Bayes' Theorem.		Central Goods and Services Tax (CGST) and Union Territory Goods and Services Tax (UTGST).
Skills	Logical and Analytical Thinking/Numeracy and Computational/Personal Development	Logical and Analytical Thinking/Numeracy and Computational/Personal Development	Logical and Analytical Thinking/Numeracy and Computational/Personal Development	Logical and Analytical Thinking/Numeracy and Computational/Academic And Life Skills/Personal Development
Activities			**Competency-skills based activity/Experiential Learning:** 1. Prepare a report card using scores of the last four exams and compare the performance. 2.Calculating average, interest (simple and compound.	**Competency-skills based activity/Experiential Learning:** Create a budget of income and spending.
Art Integration	Economics and Management Skills			
Assessment	● Project work and record ● Year-end Presentation/ Viva of the Project ● Main Book: 'Applied Mathematics'			

	August	September	October	November/December
Concepts	**Ch.8** Coordinate Geometry **Ch.9** Calculus	**Ch.10** Calculus(Contd.)	**Ch.11** Numbers & Quantification **Ch.12** Numerical Applications	**Ch.**13 Logical Reasoning **Revision of complete syllabus with HOTS**
Learning Outcomes	Students will be able to ● Find the slope and equation of the line in various forms. ● Find angle between the two lines. ● Find the perpendicular from a given point on a line. ● Find the distance between two parallel lines. ● Define a circle. ● Find different forms of equations of a circle. ● Solve problems based on applications of circle. ● Define parabola and related terms. ● Define eccentricity of a parabola. ● Derive the equation of parabola. ● Identify dependent and independent variables. ● Define a function using dependent and independent variables.	Students will be able to ● Define domain, range and codomain of a given function. ● Define various types of functions. ● Identify domain, co-domain and range of the function. ● Representation of function graphically. ● Define the limit of a function. ● Solve problems based on the algebra of limits. ● Define continuity of a function. ● Define instantaneous rate of change. ● Find the derivative of the functions. ● Find the derivative of function of a function.	Students will be able to ● Express decimal numbers in binary system. ● Express binary numbers in the decimal system. ● Relate indices and logarithm /antilogarithm. ● Find logarithms and antilogarithms of a given number. ● Enlist the laws and properties of logarithms. ● Apply laws of logarithm. ● Use logarithm in different applications. ● Calculate the time for which hands of the clock meet. ● Determine Odd days in a month/ year/ century. ● Decode the day for the given date. ● Establish the relationship between work and time. ● Compare the work done by the individual / group w.r.t. time. ● Calculate the time taken/ distance covered/ Work done from the given data. ● Solve problems based on surface area and volume of 2D and 3D shapes. ● Calculate the volume/ surface area for solid formed using two or more shapes. ● Create suitable seating plan/ draft as per given conditions (Linear/circular). ● Locate the position of a person in a seating arrangement.	Students will be able to ● Solve logical problems involving odd man out, syllogism, blood relation and coding decoding.
Skills	Logical and Analytical Thinking/Numeracy and Computational/Spatial and Visual Understanding/Personal Development	Logical and Analytical Thinking/Numeracy and Computational/Spatial and Visual Understanding/Personal Development	Logical and Analytical Thinking/Numeracy and Computational//Personal Development	Logical and Analytical Thinking/Numeracy and Computational/Spatial and Visual Understanding/Personal Development

Activities	Competency-skills based activity/Experiential Learning : Plot the graph of functions on excel and study the nature of function at various points.	Competency-skills based activity/Experiential Learning: Plot the graph of functions on excel and study the nature of Tangents at various points, on a line.		
Art Integration	Economics and Management Skills			
Assessment	● Project work and record ● Year-end Presentation/ Viva of the Project ● Main Book: 'Applied Mathematics'			