**Curriculum**
**Subject- Applied Mathematics(241)**
**Class –XI**
**Session – 2026-27**

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

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| | | space with suitable examples.<br>● Recognize and differentiate different types of events and find their probabilities.<br>● Define the concept of conditional probability.<br>● Apply reasoning skills to solve problems based on conditional probability.<br>● 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** | Understanding/Application/ Critical thinking/ Problem solving | Understanding/ Application/Critical thinking/ Problem solving | Understanding/ Application/Critical thinking/ Problem solving | Understanding/ Application/Critical thinking/ Problem solving/Analysis |
| **Activities** | | | **Competency-skills based activity/Experiential Learning:**<br>1. Prepare a report card using scores of the last four exams and compare the performance.<br>2.Calculating average, interest (simple and compound. | **Competency-skills based activity/Experiential Learning:**<br>Create a budget of income and spending. |
| **Art Integration** | Economics and Management Skills | | | |
| **Assessment** | ● Project work and record<br>● Year-end Presentation/ Viva of the Project<br>● Main Book: 'Applied Mathematics' | | | |

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

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| **Activities** | **Competency-skills based activity/Experiential Learning :**<br>Plot the graph of functions on excel and study the nature of function at various points. | **Competency-skills based activity/Experiential Learning**:<br>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<br>● Year-end Presentation/ Viva of the Project<br>● Main Book: 'Applied Mathematics' | | | |