



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	<p>Students will be able to</p> <ul style="list-style-type: none"> 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 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 understand 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. 	<p>Students will be able to</p> <ul style="list-style-type: none"> 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 n^{th} term and sum of n terms of a given GP. Solve problems based on applications of GP. Find 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 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 space with suitable 	<p>Students will be able to</p> <ul style="list-style-type: none"> Understand 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. 	<p>Students will be able to</p> <ul style="list-style-type: none"> 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)

		<ul style="list-style-type: none"> ● 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. 		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: 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	<ul style="list-style-type: none"> ● Project work and record ● Year-end Presentation/ Viva of the Project <p>Main Book: 'Applied Mathematics' (ML Agarwal)</p>			



Curriculum
Subject: Applied Mathematics (241)
Class: XI
Session: 2024-25

	August	September	October	November/December
Concepts	Ch.9 Coordinate Geometry Ch.10 Calculus	Ch.10 Calculus(Contd.)	Ch.11 Numbers & Quantification Ch.14 Numerical Applications	Ch.15 Logical Reasoning Revision of complete syllabus with HOTS
Learning Outcomes	<p>Students will be able to</p> <ul style="list-style-type: none"> 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 variable. 	<p>Students will be able to</p> <ul style="list-style-type: none"> 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. 	<p>Students will be able to</p> <ul style="list-style-type: none"> 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. 	<p>Students will be able to</p> <ul style="list-style-type: none"> 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

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	<ul style="list-style-type: none"> ● Project work and record ● Year-end Presentation/ Viva of the Project <p>Main Book: 'Applied Mathematics' (ML Agarwal)</p>			