HANSRAJ MODEL SCHOOL

PUNJABI BAGH

NEW DELHI

CURRICULUM 2024-2025

Subject : MATHEMATICS

CLASS :XII

MONTH	TOPIC/ SUBTOPIC	LEARNING INTENTIONS	ACTIVITY	ASSIGNMENT

| APRIL-MAY | **Matrices**
   I.   Meaning of matrices
   II.   Types of matrices
   III.   Operations on matrices
   IV.   Properties of addition and multiplication of matrices
   V.   Definition of Inverse of matrix

Determinants
   I.   Meaning and evaluation
   II.   Minors and Cofactors
   III.   Area of Triangle using determinants
   IV.   Applications of matrices and determinants in solving system of linear equations | ● students will be able to understand meaning of matrix, types of matrices and operations on matrices with its properties

● Students will be able to evaluate determinants of different orders
● Students will be able to solve system of linear equations

● Students will develop Analytic Thinking and Problem solving skills | | Assignment of chapter Matrices And Determinants |
| JULY | **Relations and function**
  1. Types of Relation
  2. Equivalence Relation
  3. Types of functions (One one and Onto Functions) | ● Student will be able to define equivalence relation
● Types of functions | Act 1-To verify that the relation R in the set L, of all the lines on a plane defined by R | Assignment on Relation and functions |

		={(l,m): l is perpendicular to m}is symmetric but neither reflexive nor transitive.	
	● Students will develop Analytic thinking.	**Act 2-** To verify that the relation R in the set L, of all the lines on a plane defined by R ={(l,m): l is parallel to m}is an equivalence relation	
		Act 3- To demonstrate a function which is not one-one and not onto.	Assignment on inverse trigonometric function

Inverse Trigonometric function
  I. Meaning of inverse trigonometric functions
  II. Domain and range
  III. Principal value branch
  IV. Graphs of inverse trignometric functions
	● Student will be able to understand and apply the concept of inverse trigonometric functions	**Act 4 -** To draw the graph of $\sin^{-1}x$ and $\cos^{-1}x$, using the graph of $\sin x$ and $\cos x$, find the domain and range of these function	

Continuity and differentiability
  I. Continuity
  II. Differentiability
	● Students will be able to analyse and interpret .	**Act 5** To find analytically	Assignment on continuity and differentiability.

	III. Derivatives using Chain Rule IV. Implicit functions V. Logarithmic differentiation VI. Parametric form VII. Second order derivative	● Students will be able to understand continuity at a point or given interval. ● Students will be able to differentiate different functions using different methods	the limit of a function at a point and also to check the continuity of the function at that point.	
AUGUST	**Application of derivatives** I. Rate of change II. Increasing and decreasing functions III. Maxima and minima **Integrals** I. By Substitution II. Partial fractions III. By parts IV. Special integrals V. Properties of definite integrals	● Students will be able to apply concept of derivatives in different situations ● Student will develop problem solving skill Students will understand integrals as antiderivatives and find integrals using different methods ● Find integrals using properties. ● Students will develop Analytic thinking	**Act 6** - construction of open box of maximum volume from our rectangle a sheet. **Act 7** - To verify that amongst all the rectangles of same perimeter the square has the maximum area. **Act-8-** to understand the concept of absolute maxima and absolute minima of a function in a given closed interval. Act9 To understand the concept of local maxima and local minima and point of inflexion	Assignment on Application Derivatives Assignment on Integrals.

	Linear programming solving LPP of different types. i. Introduction ii. Graphical method of solving LLP (bounded or unbounded)	● students will be able to \ solve LPP ● Students will develop critical problem solving skill ● Students will be able to comprehend		Assignment on linear programming
SEPTEMBER	Half-yearly Examination			
OCTOBER	**Application of Integrals** I. Finding area under a curve using integration **Differential equations** I. Order and degree II. Solution by variable separable method III. Solving homogeneous and linear differential equations **Probability** I. conditional probability II. multiplication theorem on probability	students will be able to find area under curves using integration ● students will be able to understand differential equation-its and solution ● students will be able to understand	**Act 10** - To compute conditional probability of	Assignment on Application of Integrals Assignment of Differential equations Assignment on Probability

			an event A when event B has already occurred.	
	III. independent events IV. total probability V. Baye's theorem and its applications VI. Random variable and its probability distribution VII. probability distribution-its mean	conditional probability and apply Baye's theorem ● students will be able to find probability distribution-its mean ● Students will develop problem solving skill and critical thinking.		
NOVEM BER	**Vectors** I. definition and types of vectors II. addition,scalar and vector product of vectors **Three-dimensional geometry** i. Direction cosines and direction ratios of a line joining two points ii. Cartesian and vector equation of a line iii. Skew lines iv. Shortest distance between two lines **v.** Angle between two lines	● students will understand definition and types of vectors,their addition,scalar and vector product ● students will be able to find equation of lines and find distance between two skew lines,angle between two lines.		Assignment of vectors Assignment of Three dimensional geometry

		● Students will be able to visualize and develop abstract thinking.		