

CHOITHRAM SCHOOL, MANIK BAGH, INDORE
ANNUAL CURRICULUM PLAN SESSION 2020 - 21

CLASS: XII
SUBJECT: MATHEMATICS

Month & Working Days	Theme/ Sub-theme Topic Days	Learning Objectives		Resources and Activities	Expected Learning Outcomes	Assessment
		Subject Specific (Content Based)	Behavioural (Application based)			
March 21 + April 02	Matrices & Determinants 23 days	To enable the students to understand operation on matrices, application of matrices, solution of equation by matrix method. Its properties, Meaning of determinant, evaluation of determinant for a square matrix, Solution of determinants using properties	Through problems based on Matrix and Determinants, they will develop 1) Imagination 2) Systematic approach 3) To handle real life situation	NCERT	Students learnt about: operation on matrices, application of matrices, solution of equation by matrix method. Its properties, Meaning of determinant, evaluation of determinant for a square matrix, Solution of determinants using properties	Assessment will be done on the basis of decided Rubrics.
April 19	Relations & Functions 19 days	To enable the students understand Equivalence relations, bijective functions. Different types of relations and functions, finding domain and range and inverse of functions and binary operation.	Through problems based on Relations and functions they will Develop: 1) Logical thinking 2) Critical thinking 3) Imagination	NCERT To verify that the relation R in the set L of all lines in a plane, defined by $R = \{(l, m) : l \parallel m\}$ is an equivalence relation. To verify that the relation R in the set L of all lines in a plane, defined by $R = \{(l, m) : l \perp m\}$ is	Students learnt about: Equivalence relations, bijective functions. Different types of relations and functions, finding domain and range and inverse of functions.	Assessment will be done on the basis of decided Rubrics

				<p>symmetric but neither reflexive nor transitive relation.</p> <p>To demonstrate a function which is not one-one but is onto.</p> <p>To demonstrate a function which is one-one but not onto.</p>		
June 10	Inverse Trigonometric Functions 10 days	To enable the students to find solutions of problems of inverse trigonometric functions. Inverse trigonometric functions ,its domain and range ,properties of inverse trigonometric functions		NCERT	Students learned about : Solutions of problems of inverse trigonometric functions. Inverse trigonometric functions ,its domain and range ,properties of inverse trigonometric functions	Assessment will be done on the basis of decided Rubrics.
June 07 + July 08	Continuity & Differentiability 15 days	To enable the students to understand 1) Continuity and differentiability. 2) Change in one variable when the other variable changes (i.e. meaning of differentiation) 3) Differentiation of trigonometric function, logarithmic function, exponential function, inverse of trigonometric function, implicit	To enable the students to understand 1) Through problems based Rolles Theorem and Mean value Theorem imagination skills are imbibed. 2) Derivatives are used in	NCERT To verify Rolle's Theorem. To understand the concepts of	Students learned about : 1) Continuity and differentiability of a function. 2) To differentiate trigonometric function, logarithmic function, exponential & parametric	Assessment will be done on the basis of decided Rubrics.

<p>July 18</p>	<p>Applications of Derivatives 18 days</p>	<p>functions, parametric form and higher order derivatives. 4) Mean value theorem and Rolle's theorem.</p> <p>1) Rate as a measure 2) Increasing and decreasing function 3) Tangent and normal 4) Errors and approximations 5) maxima and minima</p>	<p>economics to find out cost function and application skill will developed.</p> <p>Through problems based on AOD, they will develop 1) Imagination 2) Systematic approach 3) To handle real life situation</p>	<p>decreasing and increasing functions.</p> <p>To understand the concepts of local maxima, local minima and point of inflection.</p> <p>To construct an open box of maximum volume from a given rectangular sheet by cutting equal squares from each corner.</p> <p>To verify that amongst all the rectangles of the same perimeter, the square has the maximum area.</p>	<p>function, inverse of trigonometric function, 3) Higher order derivatives. 4) Mean value theorem and Rolle's Theorem. Through explanation of graph creative thinking will be imbibed.</p> <p>1) Rate as a measure 2) Increasing and decreasing function 3) Tangent and normal 4) Errors and approximations 5) maxima and minima 6) Imagination 7) Systematic approach 8) To handle real life situation</p>	
<p>August 20</p>	<p>Indefinite Integrals 10 days</p>	<p>Students will understand 1) integration 2) Different methods of integration</p>	<p>Through problems based on integration, they will develop 1) Manipulation (assumption) 2) Logical thinking 3) Systematic approach</p>	<p>NCERT</p>	<p>Students learned about : 1) integration 2) Different methods of integration By different approaches they learn 3) Manipulation 4) Logical thinking</p>	<p>Assessment will be done on the basis of decided Rubrics.</p>

					5) Systematic approach	
	Definite Integrals 07 days	To enable the students to understand 1) the meaning of Definite integral and properties of definite integrals. 2) To enable the students to understand Limit as a sum.	Through approach adopted for problems 1) Critical thinking 2) Imagination 3) indirect approach	NCERT	Students learned about : 1) Definite integral and properties of definite integrals. 2) Integration as Limit as a sum. 3)) Critical thinking 4) Imagination 5) indirect approach	Assessment will be done on the basis of decided Rubrics.
	Applications of Integrals 03 days	To enable the students to find the Area of bounded curve	To enable the students to develop 1) Critical thinking to visualize shapes 2) Accuracy for calculating area	NCERT	Students learned about : 1) to find the Area of bounded curve 2) Critically think and visualize the shapes 3) Accurately calculate area	Assessment will be done on the basis of decided Rubrics.
September 24	Applications of Integrals 015 days Differential equation 09 days	To enable the students to find the Area of bounded curve To enable the students to find 1) the function when differential equations is given. 2) Degree and order of differential equations 3) solution of various forms of differential equations 4) general and particular solution.	To enable the students to develop 1) Critical thinking to visualize shapes 2) Accuracy for calculating area To enable the students to understand 1) Different types solution 2) Different approaches for solution to problems	NCERT	Students learned about : 1) to find the Area of bounded curve 2) Critically think and visualize the shapes 3) Accurately calculate area Students learned about : 1) the function when differential equations is given. 2) Degree and order of differential equations 3) solution of various forms of	Assessment will be done on the basis of decided Rubrics.

					<p>differential equations 4)general and particular solution. 5) Different types solution 6)Different approaches for solution to problems</p>	
<p>October 22</p>	<p>Vectors 07 days</p>	<p>To enable the students to understand the concept of 1)vectors and its usage 2)Types of vectors their properties 3) Representation of vectors 4) dot and cross product of vectors 5)area of triangle and quadrilateral. 6)Scalar triple product</p>	<p>Through the concept of vectors and its usage students will attain 1) Development of visualization 2)understanding need for different types of quantities</p>	<p>NCERT</p>	<p>Students learned about : 1)vectors and its usage 2)Types of vectors their properties 3) Representation of vectors 4) dot and cross product of vectors 5)area of triangle and quadrilateral. 6)Scalar triple product 7) to visualize vectors 8)understanding different types of quantities and its importance</p>	<p>Assessment will be done on the basis of decided Rubrics.</p>

	<p>Three Dimensional Geometry 15 days</p>	<p>To enable the students to understand the concept of</p> <ol style="list-style-type: none"> 1) Straight line in space 2) Equation of line in Cartesian and vector form 3) Angle between two lines 4) shortest distance between two lines, plane and shortest distance in 3 Dimensional geometry 5) Foot of perpendicular from a point to the line 6) Equation of planes in Cartesian and vector form 7) Angle between two planes 8) shortest distance between a point and a plane . 9) intersection point of a line and plane 	<p>Through approach adopted for problems students will attain</p> <ol style="list-style-type: none"> 1) Imagination 2) Systematic approach 3) Efficiency 4) Creativity 	<p>NCERT PPT</p>	<p>Students learned about :</p> <ol style="list-style-type: none"> 1) Equation of line in Cartesian and vector form 2) Angle between two lines and shortest distance between them plane and shortest distance in 3 Dimensional geometry 5) Foot of perpendicular from a point to the line 6) Equation of planes in Cartesian and vector form 7) Angle between two planes and shortest distance between a point and a plane . 8) intersection point of a line and plane 9) Imagine line and plane 2) To proceed in Systematic manner 3) deal Efficiently 	<p>Assessment will be done on the basis of decided Rubrics.</p>
<p>November 20</p>	<p>Probability 15 days</p>	<p>To enable the students to understand:</p> <ol style="list-style-type: none"> 1) Addition theorems on probability 2) Conditional probability 3) Multiplication theorems on probability 4) Independent events 5) Total probability and Baye's Theorem 6) Binomial distribution 7) Probability distribution 8) Mean and variance 	<p>Through this chapter students will develop</p> <ol style="list-style-type: none"> 1) Logical thinking to Handling Risk 2) Imagination for Manipulating situation for better result 	<p>NCERT</p> <p>To explain the computation of conditional probability of a given event A, when event B has already occurred, through an example of throwing a pair of dice.</p>	<p>Students learned/ developed :</p> <ol style="list-style-type: none"> 1) Addition and Multiplication theorems on probability 2) Conditional probability 4) Independent events, Total probability and Baye's Theorem 5) Binomial & Probability distribution 6) Mean and variance . 7) Logical thinking to Handle Risk 8) Imagination for Manipulating situation 	<p>Assessment will be done on the basis of decided Rubrics.</p>

	Linear Programming 05 days	To enable the students to understand: 1)Objective function &Constraints 2)Non-negative constraints 3)Basic variables & Basic solution 4)Feasible solution -Optimal solution 5)Iso-profit line 6)Convex set 7)Corner point method 8)Bounded region, Un Bounded region 9)Iso-profit or Iso-cost method	Through this chapter students will attain 1) To handle optimization problems(Efficiency) 2) develop Systematic approach 3)Differentiate constraint from problem.	NCERT Through plotting of graph (Graphical method.)	Students learned about 1) Objective function &Constraints 2) Feasible solution -Optimal solution 3)Iso-profit line 4) Corner point method for Bounded region and Un Bounded region 5) Differentiate constraint from problem. 6)optimization problems 7) Systematic behavior & Efficiency	Assessment will be done on the basis of decided Rubrics.
December 05	Revision 05 days	Pre- Boards				