MAHARAJA AGARSAIN PUBLIC SCHOOL
a Cambridge International School
Ashok Vihar, Delhi

CLASS - XII
SUBJECT- MATHEMATICS
SESSION- 2023-24

DURATION	SYLLABUS COVERED	SYLLABUS TESTED	SUBJECT ENRICHMENT/PRACTICAL/ ENGLISH/ CONVERSATION/ VISUAL STIMULUS	LEARNING OUTCOMES	RESOURCES	SDG

PT1 (APR-MAY)	1)Continuity and differentiability 2) Applications of Derivatives 3) Matrices 4) Determinants	• Continuity and Differentiability • Application of Derivatives	To find analytically the limit of a function $f(x)$ at $x = c$ and also to check the continuity of the function at that point To verify mean value theorem..	SWBAT identify points of discontinuity of functions, To identify points of non-differentiability of functions, To find derivatives of exponential and logarithmic functions, To find derivatives of functions in parametric form. SWBAT To find Rate of change of dependent variable due to change in independent variable, To identify increasing and decreasing functions, To find equation of tangent and normal at a point on the given curve, To find error in a variable due to error in another variable, To find approximate values of quantities using derivatives, To find maxima and minima points of a function SWBAT add 2 matrices, Expressing matrix as sum of symmetric and skew symmetric matrices, To find inverse of a matrix by using elementary row transformations SWBAT find area of triangle, To understand properties to simplify determinants, To solve system of equations using matrices.	https://www.youtube.com/watch?v=DDTMh7MuqcDc (continuous functions) https://www.youtube.com/watch?v=m8gEMcnWPOg(continuity at point) https://www.youtube.com/watch?v=XoqUdUEcHik (differentiation at a point) https://www.youtube.com/watch?v=AGkTQW1qGMo (increasing and decreasing function) https://www.youtube.com/watch?v=JMjbPh1Mjn8 (order of matrix)	No poverty SDG 1 Zero Hunger SDG 2 Good health and well being SDG 3 Quality Education SDG4

	5) Inverse trigonometric functions 6) Linear programming		To sketch the graphs of a^x and $\log_a x$, $a > 0$, $a \neq 1$ and to examine that they are mirror images of each other.	SWBAT find inverse values of trigonometric functions SWBAT find optimal solutions to problems containing system of inequalities.	https://www.youtube.com/watch?v=ZCmVpGv6_1g (addition of matrices) https://www.youtube.com/watch?v=o6tGHLkZvVM (multiplication of 2X2matrices) https://www.youtube.com/watch?v=hiuqyvR-f_4&t=40s (adjoint of a matrix) https://www.youtube.com/watch?v=KMKd993vG9Q(value of determinant)	Gender Equality SDG5 Clean water and sanitation SDG6

					https://www.youtube.com/watch?v=NNmiOoWt86M(solving of linear equations using matrices) https://www.youtube.com/watch?v=xfhzwNkMNg4&list=RDCMUCiTjCIT_9EXV1Wp1cY0zaUA&index=2 (inverse of matrix) https://www.youtube.com/watch?v=Uo6aRV-mbeg (intro of LPP) https://youtu.be/qQFAvPF2OSI(graphical solution of LPP)	

TERM-I (JUNE-JULY)		• Continuity and differentiation • Application of derivatives, • Matrices, • Determinants • Linear Programming				

PT-2 (JULY-AUG)	• Integrals • Applications of Integrals • Differential Equations • Relations and Functions	• Integrals • Inverse Trigonometric Functions	To demonstrate a function which is one-one but not onto.	SWBAT understand Integration as an inverse process of differentiation, To study Methods of Integration- Integration of special functions, Method of Partial fractions, By-Parts, To find Definite integral using substitution and properties SWBAT find Area of irregular region using integration SWBA To identify degree and order of a differential equation, To form differential equation when solution is given, To solve differential equations using variable separable, homogeneous, Linear DE method SWBAT identify one to one, onto and invertible functions., To find inverse of a function if it exists., To identify whether the binary operation is associative, commutative., To find identity and inverse of binary operations		Affordable and Clean Energy SDG 7 Industry,Innovation and Infrastructure SDG 9 Reduced Inequalities SDG 10

HALF YEARLY (SEP)		• Continuity and differentiation, • Application of derivatives, • Matrices, • Determinants • Linear Programming • Integrals • Applications of Integrals • Differential Equations • Relations and Functions • Inverse Trigonometric Functions				

TERM II (NOV)	Vector Algebra Three Dimensional Geometry Probability	• Continuity and differentiation , • Application of derivatives, • Matrices, • Determinants • Linear Programming • Integrals • Applications of Integrals • Differential Equations • Relations and Functions • Vector Algebra • Three Dimensional Geometry • Probability • Inverse Trigonometric Functions	To find the dot product and cross product of two given vectors and analyse the difference between the resultant. To understand the concept of 3-D plane With the help of paper folding.	SWBAT find dot product and cross product of 2 vectors, To find Scalar triple product of 3 vectors, To find projection of one vector on another , To analyze vectors if dot product or cross product is zero. SWBAT find equation of line in space in Cartesian and vector form, To find equation of plane in Cartesian and vector form , To find angle between 2 lines using dc's, To find distance between 2 lines, To find angle between 2 planes using normal lines, To find distance between a point from a plane. SWBAT find probability using conditional probability formula, To identify and solve problem by Bayes' theorem, To find probability distribution of different random variables, To identify and solve problem by using Bernoulli trials,		Sustainable cities and Communities SDG11 Climate Action SDG13 Life on Land SDG 15

PREBOARD (DEC)		• Continuity and differentiation, • Application of derivatives, • Matrices, • Determinants • Integrals • Applications of Integrals • Differential Equations • Vector Algebra • Three Dimensional Geometry • Probability • Relation and Function • LPP • Inverse Trigonometric Functions				

FINAL BOARD EXAM						