THE AIR FORCE SCHOOL : SUBROTO PARK : DELHI CANTT-110010

Class – XII

Sub: Mathematics

Weekly Syllabus (Tentative)

Academic Session 2024-25

Month	Week	Dates		Days	No of Periods	Chapter	Contents	Syllabus
Mar 24	Block Teaching			12	12	**Chapter – 3** Matrices **Chapter – 4** Determinants	Concept, notation, equality, types of matrices, Zero matrix. Transpose of a matrix, symmetric, and skew symmetric matrices, addition multiplication, scalar multiplication of matrix, simple properties of addition, multiplication, Scalar, multiplicative. Non-commutativity of matrix multiplication. Existence of non-zero matrixes whose product is Zero restricted to square matrix? Matrix of order 2. Invertible matrices and proof the uniqueness of inverse if it exists. Determinants of square matrix up to 3x3 matrix.	
Apr-24	I	01-06	**06-Working Saturday (Staff)**	05		**Chapter – 4** Determinants	minors, co-factors and applications of determinants in finding the area of a triangle.	

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							Adjoint and inverse of a square matrix. Consistency, inconsistency and number of solutions of system of linear equations by examples, solving system of linear equations in two or three variables (having unique solution) using inverse of a matrix.	
	II	08-12	**11 – Id-ul-Fitr**	04		**Chapter – 1** Relations and Functions	Relations: Types of relations: reflexive, symmetric, transitive and equivalence relations. Functions: One to one and onto functions.	
	III	15-19	**14 - Ambedakar Jayanti 17 – Ram Navami 21 - Mahavir Jayanti**	04		**Chapter – 2** Inverse Trigonometric functions	Definition, range, domain, principal value branch. Graphs of inverse trigonometric functions.	
	IV	22-27	**27-Working Saturday (Student)**	06		**Chapter – 5** Continuity and Differentiability	Continuity and differentiability, chain rule, derivative of inverse trigonometric functions derivative of implicit functions. Concept of exponential and logarithmic functions.	
	V	29-30		02		**Chapter – 5**		

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						Continuity and Differentiability		
May-24	I	01-03	01-03 : ES-1 (XII)/ CT-1 (X)	03		**Chapter – 5** Continuity and Differentiability	Derivatives of logarithmic and exponential functions. Logarithmic differentiation,.	**Date: 01-07 May** **Chapter – 3** Matrices **Chapter – 4** Determinants
	II	06-10	06-07 : ES-1 (XII)/ CT-1 (X) 09,10 – The Quest	05		**Chapter – 5** Continuity and Differentiability	derivative of functions expressed in parametric forms Second order derivatives.	
	III	13-18	18- Working Saturday (Open House X & XII)	06		**Chapter – 6** Applications of Derivatives	Rate of change as an application of Derivatives in the real-life situations.	
***** SUMMER BREAK 20 MAY -30 JUN 2024 ******								
Jul-24	I	01-06	01- School reopens for staff **06-Working Saturday (Student)**	05		**Chapter – 6** Applications of Derivatives	Increasing and Decreasing functions as an application of Derivatives.	**Class VI-X Date: 05 Jul – 12Jul** **05 Jul – 12Jul**
	II	08-12		05		**Chapter – 6** Applications of Derivatives	Concepts of Maxima and minima 1st derivative test. 2nd derivatives test Simple	**Chapter – 1** Relations and Functions **Chapter – 2**

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							problem, Related to real life situations).	Inverse Trigonometric functions
	III	15-19	**17-Muharram**	04		**Chapter – 6** Applications of Derivatives	Miscellaneous problems on chapter 6	**Chapter – 3** Matrices **Chapter – 4** Determinants
						Chapter – 7 Integrals	Integration as inverse process of Differentiation. Integration of variety of function by substitution	**Chapter – 5** Continuity and Differentiability **Chapter – 6**
	IV	22-27	**27 – Working Saturday (Students)**	06		**Chapter – 7** Integrals	Integration by partial fraction, by parts and Integration based on formulas. Fundamental theorem of integral calculus. Basic properties	Application of Derivatives Only Rate of Change
	V	29-31		03		**Chapter – 7** Integrals	integration based on properties of definite integrals	
Aug-24	I	01-03	**03 – Working Saturday (Open House (VI-X), XII)**	03		**Chapter – 7** Integrals	integration based on properties of definite integrals	
	II	05-09		05		**Chapter – 8** Applications of the Integrals	Finding the area under simple curves especially lines, circles/parabolas/ellipses (in standard form only).	
	III	12-16	**15 – Independence Day**	04		**Chapter – 8**	Miscellaneous problems on	

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						Applications of the Integrals	chapter 8	
	IV	19-23	**19-Raksha Bandhan**	04		**Chapter – 12** Linear Programming	Introduction, related terminology such as constraints, objective function, optimization, graphical method of solution for problems in two variables, feasible and infeasible regions (bounded or unbounded), feasible and infeasible solutions, optimal feasible solutions (up to three non-trivial constraints)	
	V	26-31	**26-Janmashtami** **31-Working Saturday (Students)** **31-Annual Prize Distribution**	05		REVISION for Mid Term	.	
Sep-24	I	02-06						
	II	09-14	**14 – Working Saturday (Students)**	06		Mid Term/ HYE Exam		<mark>Mid Term (PT-II)/ HYE</mark> **Date 02-14 Sep**

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	IV	16-21	**16-Milad-un-Nabi** **21 – Working Saturday (Students)**	05	03	**Chapter – 9** Differential Equations	Differential Equations :- definition, order and degree. General and particular solution of Differential equations by : Variable separable method. Solution of homogeneous differential equation of 1st order and 1st degree.	**TERM - I** **Chapter – 1** Relations and Functions **Chapter – 2** Inverse Trigonometric functions **Chapter – 3** Matrices **Chapter – 4** Determinants
		23-27		05		**Chapter – 9** Differential Equations	Solution of linear differential equation of 1st order and 1st degree. Misc. Questions based on the chapter	**Chapter – 5** Continuity and Differentiability **Chapter – 6** Application of Derivatives
	V	30		01		**Chapter – 10** Vectors	Multiplication of vector by scalar, position vector of a point dividing a line segment in a given ratio.	**Chapter – 7** Integrals **Chapter – 8** Application of the Integrals **Chapter – 12** Linear Programming
Oct-24	II	01-05	**02-Mahatma Gandhi's Birthday** **05-Annual Prize Distribution**	04		**Chapter – 10** Vectors	Scalar (dot) product of vectors Direction, Cosines and direction ratio of vectors Projection of a vector on a line. Cross product of vectors	
	III	07-12	**09-13– Autumn Break** **12- Dussehra**	02		**Chapter – 11** Three-	Three-dimensional geometry: - Direction	

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						dimensional geometry	cosines, Direction Ratios of a line join two points	
	IV	14-19	**17-Maharishi Valmiki's Birthday** **19 – Working Saturday (Open House VI-XII)**	05		**Chapter – 11** Three-dimensional geometry	Cartesian and vector equation of a line,	
	V	21-25	**20– Karwa Chouth**	05		**Chapter – 11** Three-dimensional geometry	Coplanar and skew lines. Shortest distance between two lines . Angle between two lines. Point of intersection of two lines. Foot of perpendicular and Image of point	
	VI	28-31	**30-03 Nov – Diwali Break**	02		**Chapter -13** Probability	Conditional probability.	
*** Autumn Break 09-13 Oct 2024 ***								
Nov-24	I	04-09	**09 – Working Saturday (Students)**	06		**Chapter -13** Probability	Multiplication theorem on probability. Independent events. Total probability. *Baye's theorem* *Random variable* and its probability distribution, mean	
	II	11-15	**12 – Annual Day**	04				

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			15 – Guru Nank's Birthday					
	III	18-22		05				**PT-II (VI-VIII):** 19 Nov-10 Dec **PT-III (IX):** 19 Nov-10 Dec **PT-III (X):** 14 Nov-25 Nov **MPB (XII):** 14 Nov-25 Nov
	IV	25-30	**29,30 – Annual Athletic Meet**	06				
Dec-24	I	02-07	**07 – Sports Day**	06				Complete Syllabus
	II	09-13		05				
	III	16-21	**21-Working Saturday, Open House (X & XII)**	06				
	IV	23	**24,25 – Christmas Holidays**	01				
*** Winter Break from 26 Dec to 04 Jan 2025 ***								
Jan-25	I	06-10		05				
	II	13-18	**18-Working Saturday, Open House (VI-IX, XI)**	06				

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	III	20-25	**25-Citation Ceremony** **25-Open House XII** **26-Republic Day**	06				
	IV	27-31		05				
Feb-25	I	01	**01 – Farewell XII** **01- Open House X**	01				<mark>**Annual Exam Class IX & XI** – 05 Feb-19 Feb 2025</mark>
	II	03-07		05				
	III	10-14		05				
	IV	17-22	**22-Working Saturday (students)**	06				
	V	24-28	**26-Maha Shivratri**	04				
Mar-25	<mark>**Annual Exam Classes VI-VIII – 25 Feb-10 Mar 2025**</mark>							

<mark>*Note: The examination syllabus as mentioned above is to be considered Tentative. The final syllabus for each exam will be uploaded on the website along with the Date Sheet at the time of the examination.*</mark>