DELHI PUBLIC SCHOOL, JAMMU
SYLLABUS BIFURCATION
SESSION: 2024-25

Class: XII   **Subject: Mathematics (041)**

Objectives:

The broad objective of teaching Mathematics at Senior School stage intends to help the students:

1. **To acquire knowledge and critical understanding, particularly by way of motivation and visualization, of basic concepts, terms, principles, symbols and mastery of underlying processes and skills.**
2. **To feel the flow of reasons while proving a result or solving a problem.**
3. **To apply the knowledge and skills acquired to solve problems and wherever possible, by more than one method.**
4. **To develop positive attitude to think, analyze and articulate logically.**
5. **To develop interest in the subject by participating in related competitions.**
6. **To acquaint students with different aspects of Mathematics used in daily life.**
7. **To develop an interest in students to study Mathematics as a discipline.**
8. **To develop awareness of the need for national integration, protection of environment, observance of small family norms, removal of social barriers, elimination of gender biases.**
9. **To develop reverence and respect towards great Mathematicians for their contributions to the field of Mathematics.**

S.No	Month	Name of units
1	April	**Relations and functions, Inverse Trigonometric functions** **Foundation worksheet: -** To understand students previous knowledge and for the revision of previous concepts of Sets, Relation and function. ❖ **Activity-1:-** To demonstrate a function which is one-one but not onto.
2	May	**Algebra (Matrices)** **Assignment-1:-** To provide opportunity for students to practice and also develop critical thinking and independent problem-solving skills. **Kahoot Quiz** on Relations and functions to test the knowledge of students.
3	June	**Algebra (Determinants)** **Class test-1:-** To evaluate the understanding of abstract concepts of the students on the topic Matrices and Determinants. **Team exercise (Power point presentation)** on Matrices and determinants. **Sample paper -1:** **Topics:** 1. Relations and Functions 2. Inverse Trigonometric Functions 3. Matrices 4. Determinants
4	July	**Calculus (Continuity)** **Foundation worksheet** on calculus for the revision of previous concepts. **Assignment-2** on the topic continuity. ❖ **Activity-2:-** To find analytically the limit of a function f(x) at x=c and also to check the continuity of a function at that point.
5	August	**Calculus (Differentiability, Applications of derivatives)** **Experiential learning: -** To enhance the knowledge and skill of the students. **Assignment-3** on the topic continuity and differentiability. **Sample paper -2:**

		Topics:
		1. Relations and Functions
		2. Inverse Trigonometric Functions
		3. Matrices
		4. Determinants
		5. Continuity and Differentiability
		6. Applications of Derivatives
6	September	**Calculus (Applications of derivatives continued)** **Kahoot quiz** on Applications of derivatives to reiterate important concepts. **Experiential learning** to enhance the knowledge and skill of the students. ❖ **Activity-3:-** To understand the concepts of increasing and decreasing functions. ❖ **Activity-**4:- To construct an open box of maximum volume from a given rectangular sheet by cutting equal squares from each corner. **Assignment-4** on the topic Applications of derivatives.
7	October	**Calculus (Integrals and Applications of Integrals)** **Assignment-5** on the topics Integrals and Differential equations. **Class test-3:-** To evaluate the understanding of the students on the topic Integrals and Applications of Integrals.
8	November	**Differential equations and Vector and Three-Dimensional Geometry** **Kahoot quiz** on the topic differential equations ,Vector and Three-Dimensional Geometry. **Assignment-8** on the topics Vector and Three-Dimensional Geometry ❖ **Activity-5:-** To measure shortest distance between two skew lines and verify it analytically.
9	December	**Linear Programming and Probability** **Assignment-8** on linear programming and Probability. ❖ **Activity-6:-** To explain the computation of the conditional probability of a given event A, when event B has already occurred, through an example of throwing a pair of dice. **Sample paper-3:-** **Topics:** 1. Relations and Functions 2. Inverse Trigonometric Functions 3. Matrices 4. Determinants 5. Continuity and Differentiability 6. Applications of Derivatives 7. Integrals (Definite and indefinite) 8. Differential Equations 9. Vectors 10. Three-Dimensional Geometry **11.** Linear Programming
10	January	➤ **Case study questions**
11	February	➤ **Revision**
12	March	➤ **Revision**

Exam Schedule:

Syllabus of Cycle Test-1:

1. **Relations and Functions**
2. **Inverse Trigonometric Functions**
3. **Matrices**
4. **Determinants**

Syllabus of Half –Yearly:

1. **Relations and Functions**
2. **Inverse Trigonometric Functions**
3. **Matrices**
4. **Determinants**
5. **Continuity and Differentiability**
6. **Applications of Derivatives**

Syllabus of Pre-Board -1:

1. **Relations and Functions**
2. **Inverse Trigonometric Functions**
3. **Matrices**
4. **Determinants**
5. **Continuity and Differentiability**
6. **Applications of Derivatives**
7. **Integrals (Definite and indefinite)**
8. **Application of Integrals**
9. **Differential Equations**
10. **Vectors**
11. **Three-Dimensional Geometry**
12. **Linear Programming**

Syllabus of Pre-Board -2:

1. **Relations and Functions**
2. **Inverse Trigonometric Functions**
3. **Matrices**
4. **Determinants**
5. **Continuity and Differentiability**
6. **Applications of Derivatives**
7. **Integrals (Definite and indefinite)**
8. **Application of Integrals**
9. **Differential Equations**
10. **Vectors**
11. **Three-Dimensional Geometry**
12. **Linear Programming**
13. **Probability**

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