Annual & Weekly Syllabus Split-Up - 2025-26
Grade XII

Subject: Mathematics (041)

S.No	Month	No. of Working Days		No. of Days	Topic	Sub Topic	Resources	Activity	Art Integrated project	Pedagogy Process/Teaching Strategy	Chapterwise Notes link	Assessment
1	APRIL	25	Week 1	4	**Continuity and Differentiability**	Continuity and differentiability,	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Graph-based continuity check; Simple derivative practice; Identify continuity from graphs	Create graphical art using continuous and discontinuous curves; Design patterns using smooth vs broken curves (integration with visual arts)	Conceptual Learning, Step-by-step derivation, Visual explanation using graphs; Think–Pair–Share; Focus on conceptual clarity	Resources (Worksheet + Mind Maps)	MCQs + Short answer questions
						chain rule, derivative of composite functions, Inverse function	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Graph-based continuity check; Simple derivative practice; Identify continuity from graphs	Create graphical art using continuous and discontinuous curves; Design patterns using smooth vs broken curves (integration with visual arts)	Conceptual Learning, Step-by-step derivation, Visual explanation using graphs; Think–Pair–Share; Focus on conceptual clarity	Resources (Worksheet + Mind Maps)	MCQs + Short answer questions
			Week 2	6	**Continuity and Differentiability**	derivative of implicit functions. Concept of exponential and logarithmic functions	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Solve implicit equations; Practice logarithmic differentiation; Parametric curve plotting	**Design growth patterns (spirals/log curves); Artistic representation of exponential growth (nature patterns like shells, plants)**	Activity-based + Problem-solving approach; Use of standard results; ICT tools (GeoGebra); Focus on application and pattern recognition	Resources (Worksheet + Mind Maps)	Worksheet + Case-based questions
						Derivatives of logarithmic and exponential functions.	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Solve implicit equations; Practice logarithmic differentiation; Parametric curve plotting	**Design growth patterns (spirals/log curves); Artistic representation of exponential growth (nature patterns like shells, plants)**	Activity-based + Problem-solving approach; Use of standard results; ICT tools (GeoGebra); Focus on application and pattern recognition	Resources (Worksheet + Mind Maps)	Worksheet + Case-based questions
						Logarithmic differentiation, derivative of functions expressed in parametric forms.	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Solve implicit equations; Practice logarithmic differentiation; Parametric curve plotting	**Design growth patterns (spirals/log curves); Artistic representation of exponential growth (nature patterns like shells, plants)**	Activity-based + Problem-solving approach; Use of standard results; ICT tools (GeoGebra); Focus on application and pattern recognition	Resources (Worksheet + Mind Maps)	Worksheet + Case-based questions
			Week 3	5		Second order derivatives.	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Real-life rate problems (speed, growth); Tangent drawing activity; Graph analysis	**Create slope-based designs (tangent lines on curves); Model road/bridge curves showing slope changes; Integration with architecture/design**	Real-life application, Inquiry-based learning; Graph interpretation; Concept from derivative → application	Resources (Worksheet + Mind Maps)	Numerical problems + Graph-based questions + Short test
						rate of change of quantities,	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Real-life problems on rate of change (speed, growth); Graph analysis to identify increasing/decreasing intervals; Finding maxima and minima using first derivative test	**Design curves showing increasing/decreasing behavior; Create models of hills/valleys representing maxima and minima; Integration with art and real-life structures (bridges, roads)**	Conceptual and application-based learning; Graphical interpretation; Inquiry-based approach; Step-by-step problem solving; Use of ICT tools (GeoGebra); Focus on real-life applications and critical thinking	Resources (Worksheet + Mind Maps)	Numerical problems + Graph-based questions + Short test

					Applications of derivatives:	rate of change of quantities,	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Real-life problems on rate of change (speed, growth); Graph analysis to identify increasing/decreasing intervals; Finding maxima and minima using first derivative test	**Design curves showing increasing/decreasing behavior; Create models of hills/valleys representing maxima and minima; Integration with art and real-life structures (bridges, roads)**	Conceptual and application-based learning; Graphical interpretation; Inquiry-based approach; Step-by-step problem solving; Use of ICT tools (GeoGebra); Focus on real-life applications and critical thinking	Resources (Worksheet + Mind Maps)	Numerical problems + Graph-based questions + Short test
			Week 4	6		increasing/decreasing functions,	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Real-life problems on rate of change (speed, growth); Graph analysis to identify increasing/decreasing intervals; Finding maxima and minima using first derivative test	**Design curves showing increasing/decreasing behavior; Create models of hills/valleys representing maxima and minima; Integration with art and real-life structures (bridges, roads)**	Conceptual and application-based learning; Graphical interpretation; Inquiry-based approach; Step-by-step problem solving; Use of ICT tools (GeoGebra); Focus on real-life applications and critical thinking	Resources (Worksheet + Mind Maps)	Numerical problems + Graph-based questions + Short test
						maxima and minima	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps		**Design curves showing increasing/decreasing behavior; Create models of hills/valleys representing maxima and minima; Integration with art and real-life structures (bridges, roads)**	Discussion + visual learning + real-life examples	Resources (Worksheet + Mind Maps)	Numerical problems + Graph-based questions + Short test
			Week 5	4	**Relations and Functions**	reflexive, symmetric, transitive and equivalence relations	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Identify relations from real-life examples; Verify properties (reflexive, symmetric, transitive) using sets; Mapping diagrams to identify one-one and onto functions	**Create mapping diagrams using artistic patterns; Design network/connection models showing relations; Integration with art (patterns) and computer science (functions)**	Conceptual and logical reasoning approach; Use of real-life examples; Step-by-step explanation using sets and mappings; Visual representation through diagrams; Think–Pair–Share; Focus on understanding properties and function behavior	Resources (Worksheet + Mind Maps)	MCQs + Assertion-Reason questions; Short answer questions; Case-based questions; Worksheet
						One to one and onto functions.	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Identify relations from real-life examples; Verify properties (reflexive, symmetric, transitive) using sets; Mapping diagrams to identify one-one and onto functions	**Create mapping diagrams using artistic patterns; Design network/connection models showing relations; Integration with art (patterns) and computer science (functions)**	Conceptual and logical reasoning approach; Use of real-life examples; Step-by-step explanation using sets and mappings; Visual representation through diagrams; Think–Pair–Share; Focus on understanding properties and function behavior	Resources (Worksheet + Mind Maps)	MCQs + Assertion-Reason questions; Short answer questions; Case-based questions; Worksheet
2	JUNE	20	Week 1	0								
			Week 2	6	**Inverse Trigonometric Functions**	. Graphs of inverse trigonometric functions.	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Graph plotting of inverse trigonometric functions; Identify domain and range using graphs; Matching function with its inverse; Practice problems on principal value branch	Create artistic patterns using trigonometric curves and their inverses; Design wave/curve-based art; Integration with visual arts and real-life patterns	Conceptual understanding using function–inverse relation; Graph-based visualization; Step-by-step explanation of domain and range restrictions; Use of ICT tools (GeoGebra); Think–Pair–Share; Focus on reasoning and graphical interpretation	Resources (Worksheet + Mind Maps)	MCQs; Graph-based questions; Short answer questions; Case-based problems; Worksheet
			Week 3	6		Definition, range, domain, principal value branch	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Graph plotting of inverse trigonometric functions; Identify domain and range using graphs; Matching function with its inverse; Practice problems on principal value branch	Create artistic patterns using trigonometric curves and their inverses; Design wave/curve-based art; Integration with visual arts and real-life patterns	Conceptual understanding using function–inverse relation; Graph-based visualization; Step-by-step explanation of domain and range restrictions; Use of ICT tools (GeoGebra); Think–Pair–Share; Focus on reasoning and graphical interpretation	Resources (Worksheet + Mind Maps)	MCQs; Graph-based questions; Short answer questions; Case-based problems; Worksheet
			Week 4	6	**Integrals**	Integration as inverse process of differentiation	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Practice problems on substitution and by-parts; Matching functions with correct method; Basic integration drills	Create curve-based artistic patterns; Design shapes using simple integrals; Integration with visual arts	Conceptual + procedural learning; Step-by-step method explanation; Pattern recognition; Think–Pair–Share; Focus on basic techniques and conceptual clarity	Resources (Worksheet + Mind Maps)	Numerical problems; MCQs; Worksheet

			Week 5	2	**Integrals**	Integration of a variety of functions by substitution	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Practice problems on substitution and by-parts; Matching functions with correct method; Basic integration drills	Create curve-based artistic patterns; Design shapes using simple integrals; Integration with visual arts	Conceptual + procedural learning; Step-by-step method explanation; Pattern recognition; Think–Pair–Share; Focus on basic techniques and conceptual clarity	Resources (Worksheet + Mind Maps)	Numerical problems; MCQs; Worksheet
3	JULY	27	Week 1	4		by partial fractions	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Solve partial fraction problems; Area under curve activity; Graph-based understanding of definite integrals	Create shaded region designs (area under curves); Artistic patterns using definite integrals; Integration with art and physics	Application-based learning; Link between indefinite and definite integrals; Area under curve concept; Use of ICT tools (GeoGebra); Focus on higher-order thinking	Resources (Worksheet + Mind Maps)	Case-based questions; Graph-based questions; Short test + assignment
			Week 2	6		by parts,	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Solve partial fraction problems; Area under curve activity; Graph-based understanding of definite integrals	Create shaded region designs (area under curves); Artistic patterns using definite integrals; Integration with art and physics	Application-based learning; Link between indefinite and definite integrals; Area under curve concept; Use of ICT tools (GeoGebra); Focus on higher-order thinking	Resources (Worksheet + Mind Maps)	Case-based questions; Graph-based questions; Short test + assignment
			Week 3	6		Fundamental Theorem of Calculus	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Solve partial fraction problems; Area under curve activity; Graph-based understanding of definite integrals	Create shaded region designs (area under curves); Artistic patterns using definite integrals; Integration with art and physics	Application-based learning; Link between indefinite and definite integrals; Area under curve concept; Use of ICT tools (GeoGebra); Focus on higher-order thinking	Resources (Worksheet + Mind Maps)	Case-based questions; Graph-based questions; Short test + assignment
			Week 4	6		properties of definite integrals	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps		Create shaded region designs (area under curves); Artistic patterns using definite integrals; Integration with art and physics	Application-based learning; Link between indefinite and definite integrals; Area under curve concept; Use of ICT tools (GeoGebra); Focus on higher-order thinking	Resources (Worksheet + Mind Maps)	Case-based questions; Graph-based questions; Short test + assignment
			Week 5	5	**Application of the Integral**	area under simple curves,	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Shade area under curves on graph paper; Compare areas between two curves; Solve real-life problems involving area; Identify bounded regions	Create artistic designs by shading regions under curves; Pattern making using bounded areas; Integration with visual arts and architecture (design layouts	Conceptual + application-based learning; Visualization using graphs; Step-by-step area interpretation; Use of ICT tools (GeoGebra); Think–Pair–Share; Focus on real-life application and graphical understanding	Resources (Worksheet + Mind Maps)	Numerical problems; Graph-based questions; Case-study questions; Worksheet + short test
4	AUGUST	24	Week 1	1		Definition, order and degree,	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Identify order and degree from given equations; Solve differential equations using different methods; Match equation with appropriate method; Real-life modelling problem	Create flow-based designs representing change (growth/decay curves); Artistic representation of solution curves; Integration with physics (motion, growth models)	Conceptual and procedural learning; Step-by-step solution methods; Focus on identifying type of differential equation; Use of real-life models (growth/decay); Think–Pair–Share; ICT tools for visualization; Emphasis on problem-solving and logical reasoning	Resources (Worksheet + Mind Maps)	Numerical problems; MCQs; Case-based questions; Short answer test; Workshee
			Week 2	6	**Differential Equations**	by method of separation of variables , Homogenous	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Identify order and degree from given equations; Solve differential equations using different methods; Match equation with appropriate method; Real-life modelling problem	Create flow-based designs representing change (growth/decay curves); Artistic representation of solution curves; Integration with physics (motion, growth models)	Conceptual and procedural learning; Step-by-step solution methods; Focus on identifying type of differential equation; Use of real-life models (growth/decay); Think–Pair–Share; ICT tools for visualization; Emphasis on problem-solving and logical reasoning	Resources (Worksheet + Mind Maps)	Worksheets

			Week 3	5		linear differential equation	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Identify order and degree from given equations; Solve differential equations using different methods; Match equation with appropriate method; Real-life modelling problem	Create flow-based designs representing change (growth/decay curves); Artistic representation of solution curves; Integration with physics (motion, growth models)	Conceptual and procedural learning; Step-by-step solution methods; Focus on identifying type of differential equation; Use of real-life models (growth/decay); Think–Pair–Share; ICT tools for visualization; Emphasis on problem-solving and logical reasoning	Resources (Worksheet + Mind Maps)	Worksheets
			Week 4	6	**Vectors**	vectors types , operation	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Vector addition using triangle/parallelogram law; Representation on graph paper; Real-life direction problems (displacement)	Create arrow-based designs showing vector operations; Artistic patterns using vector directions; Integration with physics (force, motion)	Conceptual understanding using diagrams; Visual learning and real-life examples; Step-by-step operations; Think–Pair–Share; Focus on geometric interpretation	Resources (Worksheet + Mind Maps)	NCERT + NCERT Exemplar + CBSE PYQs; Worksheets
			Week 5	5+1		dot and cross product	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Find angle between vectors using dot product; Area using cross product; Solve application-based problems	Design geometric patterns using vector products; Create models showing area (cross product concept); Integration with physics and design	Discussion-based and visual learning; Geometric interpretation of products; Use of real-life examples (work done, area); ICT tools for visualization	Resources (Worksheet + Mind Maps)	NCERT + NCERT Exemplar + CBSE PYQs; Worksheets
5	SEPTEMBER	23	Week 1	5	**TERM -1**							
			Week 2	6								
			Week 3	5	**3D**	Cartesian equation and vector equation of a line and skew lines	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Plot lines in 3D coordinate system; Identify parallel, intersecting and skew lines; Solve problems on direction ratios and shortest distance	Create 3D models using sticks/threads to represent lines; Design structures showing skew lines (bridges, frames); Integration with art and architecture	Conceptual and visual learning using 3D diagrams; Step-by-step derivation of equations; Use of ICT tools (GeoGebra 3D); Think–Pair–Share; Focus on spatial understanding and application	Resources (Worksheet + Mind Maps)	NCERT + NCERT Exemplar + CBSE PYQs; Worksheets
			Week 4	5	**Probablity**	Conditional probability	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Solve problems using tree diagrams; Identify independent/dependent events; Real-life case studies (games, weather)	Create mind maps showing probability relationships; Design visual probability trees; Integration with art and data representation	Conceptual and application-based learning; Use of tree diagrams and Venn diagrams; Real-life examples; Think–Pair–Share; Focus on logical reasoning and interpretatio	Resources (Worksheet + Mind Maps)	NCERT + NCERT Exemplar + CBSE PYQs; Worksheets
			Week 5	3	**Probablity**	Bayes' theorem.	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Solve problems based on Bayes' theorem; Case-study based questions (medical testing, selection problems); Practice conditional probability applications	Design flowcharts/mind maps representing Bayes' theorem; Artistic representation of probability flow; Integration with real-life decision making	Inquiry-based learning; Step-by-step explanation using real-life scenarios; Visual representation using probability trees; ICT tools for better understanding; Focus on reasoning and decision-making	Resources (Worksheet + Mind Maps)	NCERT + NCERT Exemplar + CBSE PYQs; Worksheets
6	OCTOBER	25	Week 1	2	**Matrices**	Types , Operations	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Perform matrix operations; Identify types of matrices; Solve real-life tabular data problems	Create grid-based artistic patterns using matrices; Design pixel art using matrix representation; Integration with computer science (data representation)	Conceptual and procedural learning; Step-by-step operations; Visual representation using tables; Think–Pair–Share; Focus on understanding matrix structure and rule	Resources (Worksheet + Mind Maps)	Worksheets
			Week 2	6		inverse	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	and adjoint; Application-based learning; ICT tools for verification; Focus on accuracy and logical steps	Design symmetric patterns using inverse matrices; Create transformation-based designs; Integration with art and transformations	Problem-solving approach; Step-by-step calculation of determinant and adjoint; Application-based learning; ICT tools for verification; Focus on accuracy and logical steps	Resources (Worksheet + Mind Maps)	Worksheets
			Week 3	6		inverse	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Find inverse of matrices; Solve system of equations using matrix method; Practice application-based questions	Design symmetric patterns using inverse matrices; Create transformation-based designs; Integration with art and transformations	Problem-solving approach; Step-by-step calculation of determinant and adjoint; Application-based learning; ICT tools for verification; Focus on accuracy and logical steps	Resources (Worksheet + Mind Maps)	Worksheets

			Week 4	5	**Determinant**	minors, co-factors	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Calculate determinants using different methods; Find minors and cofactors; Solve system of equations using determinants; Verify properties	Create grid-based designs using determinant values; Pattern creation using matrix arrangements; Integration with art and structured design	Conceptual and procedural learning; Step-by-step expansion (row/column); Pattern recognition; Think–Pair–Share; Focus on accuracy and logical reasoning	Resources (Worksheet + Mind Maps)	Worksheets
			Week 5	5		solving system of linear equations in two or three variables	NCERT Textbook; NCERT Exemplar; CBSE PYQs; Reference Book; ICT Tools (GeoGebra); Worksheets; Mind Maps	Calculate determinants using different methods; Find minors and cofactors; Solve system of equations using determinants; Verify properties	Create grid-based designs using determinant values; Pattern creation using matrix arrangements; Integration with art and structured design	Conceptual and procedural learning; Step-by-step expansion (row/column); Pattern recognition; Think–Pair–Share; Focus on accuracy and logical reasoning	Resources (Worksheet + Mind Maps)	
7	NOVEMBER	12	Week 1	0								
			Week 2	0								
			Week 3	0								
			Week 4	6	**PB 1**							
			Week 5	5+1								
8	DECEMBER	21	Week 1	5								
			Week 2	6	**PB 2**							
			Week 3	6								
			Week 4	4	**Practice Test**							
			Week 5	3								
9	JANUARY	22	Week 1	0								
			Week 2	6	**PB 3**							
			Week 3	5								
			Week 4	6								
			Week 5	5								
10	FEBRUARY	23	Week 1	6								
			Week 2	6								
			Week 3	5	**Annual Exam**							
			Week 4	6								
			Week 5	NA								
11	MARCH	17	Week 1	5	**Annual Exam**							
			Week 2	6								