

ASIAN SCHOOL OF TECHNOLOGY
ACADEMIC LESSONPLAN OF 2026-2027
SUBJECT: MATHEMATICS (Course Code: TH-4)

	Department: Basic Science & Humanities	1 st Year	Name of the Teaching Faculty: Srikanta Mallik, Sr. Lecturer
	Subject: Mathematics	Class Allotted: No of periods per Week: 04	Class Started from: - 17.08.2026 To 17.04.2027 No of weeks: 32 Weeks
Sl. No.	Week	Period/Day	Topics to be covered:
01	1 st	1 st	Unit 1 (1.1) Introduction to Trigonometry, Trigonometric Function, ASTC Rule
02		2 nd	Unit 1 (1.1) Concept of angles, Measurement of angles
03		3 rd	Unit 1 (1.1) Concept of degrees, grades & Radians
04		4 th	Unit 1 Problem Solved
05	2 nd	1 st	Unit 1 (1.2) Trigonometric ratios of compo & Submultiple angles
06		2 nd	Unit 1 (1.3) T-Ratios of 2A ,3A & A/2 formula
07		3 rd	Unit 1 (1.3) Exercise Problem Solved
08		4 th	Unit 1 (1.4) Introduction to Inverse Trigonometric function & Graphs
09	3 rd	1 st	Unit 1 (1.4) Some Important Identities
10		2 nd	Unit 1 (1.4) Inverse Trigonometric Formula Discussion
11		3 rd	Unit 1 (1.4) Problem Solved
12		4 th	Unit 1 (1.4) Unit Test
13	4 th	1 st	Unit 2 Introduction to Co-ordinate Geometry, Distance Formula, Division Formula
14		2 nd	Unit 2 (2.2) Formula for Area of Triangle & Problem solved
15		3 rd	Unit 2 (2.2) Slope of a Line, Angle between two lines

16		4 th	Unit 2 (2.2) Relation between Slope of Perpendicular & Parallel Lines
17	5 th	1 st	Exercise Problem Solved
18		2 nd	Unit 2 (2.3) Locus & its equation
19		3 rd	Unit 2 Equation of Straight line, Intercept form, Normal form, Slope point form, Two-point form & general form
20		4 th	Unit 2 Problem Solved
21	6 th	1 st	Unit 2 Point of intersection of two lines
22		2 nd	Unit 2 Perpendicular distance of a point from a line
23		3 rd	Unit 2 Angle between Two lines
24		4 th	Unit 2 Exercise Solved
25	7 th	1 st	Unit -2 Test
26		2 nd	Unit-3 (3.1) Definition of Complex Number, Real & Imaginary number of C.N
27		3 rd	Unit-3 Geometrical representation of C.N(Cartesian Form)
28		4 th	Unit-3 Polar form of C. N
29	8 th	1 st	Unit-3 Conjugate of C.N, Modulus of C. N
30		2 nd	Unit-3 Argument/ Amplitude of Cartesian C. N
31		3 rd	Unit-3 Argument / Amplitude of Polar form of C. N
32		4 th	Unit-3 Addition, Subtraction of complex number & their properties
33	9 th	1 st	Unit-3 Multiplication & Division of C.N & properties
34		2 nd	Unit-3 Eulerian form of a Complex Number
35		3 rd	Unit-3 Problem Solved
36		4 th	Unit-3 Square root of a complex number

37	10 th	1 st	Unit-3 Cube root of a Complex Number
38		2 nd	Unit-3 Multiplicative inverse of Complex number
39		3 rd	Unit-3 Properties of Modules
40		4 th	Unit-3 Problem Solved
41	11 th	1 st	Unit-3 De-Moivre's theorem and its simple applications
42		2 nd	Unit -3 Problem Solved
43		3 rd	Unit-3(3.2.1) Definition of Polynomial, Proper & Improper fractions, Definition of partial fractions.
44		4 th	Unit-3 (3.2.2) Resolve proper fraction into partial fractions with denominator containing non-repeated linear factors
45	12 th	1 st	Unit-3(3.2.3) Resolve proper fraction into partial fractions with denominator containing repeated linear factors.
46		2 nd	Unit-3(3.2.4) Resolve proper fraction into partial fractions with denominator containing non-repeated irreducible quadratic factors.
47		3 rd	1 st Internal Test
48		4 th	Unit-3 (3.3.1) Factorial of a non-negative integer
49	13 th	1 st	Unit-3(3.3.2) Determine $P(n, r)$ and $C(n, r)$
50		2 nd	Unit-3(3.3.3) Binomial theorem (without proof) for positive integral index
51		3 rd	Unit-3(3.3.4) Determination of general term and Middle term in binomial expansion
52		4 th	Unit-3 Problem Solved
53	14 th	1 st	Unit-3 Determinant, Expansion of determinant of 2 nd & 3 rd order
54		2 nd	Unit-3 Minor & Cofactor of Determinant
55		3 rd	Unit-3.4 Properties of Determinant e

56		4 th	Unit-3.4 Problem Solved
57	15 th	1 st	Unit-3.4 Cramer's Rule
58		2 nd	Unit-3.4 Definition of Minor, Cofactor of Matrix
59		3 rd	Unit-3.4 Transpose, Adjoint & Inverse of Matrix
60		4 th	Unit-3.4 Problem Solved on simultaneous equations
61	16 th	1 st	Unit-3 Permutation Factorial notation
62		2 nd	Unit-3 Combination
63		3 rd	Unit-3 Binomial Theorem for positive integer index
64		4 th	Unit-3 Determination of general term & middle term in binomial expansion
65	17 th	1 st	Unit-3 Problem Solved
66		2 nd	Unit-3 Unit Test
67		3 rd	Unit-4 Vector and Scalar Quantities, Addition & multiplication of Vectors
68		4 th	Unit-4 Position vector, Resolution of vector into component
69	18 th	1 st	Unit-4 Problem Solved
70		2 nd	Unit-4 Scalar and vector products of two vectors
71		3 rd	Unit-4 Angle between two vectors
72		4 th	Unit-4 Area of a triangle and Area of a parallelogram.
73	19 th	1 st	Unit-4 Geometrical Meaning of dot product & cross Product
74		2 nd	Unit-4 Simple problems related to work and moment of a force
75		3 rd	Unit-5 5.1.1 Define function.

76		4 th	Unit-5 5.1.2 Types of functions, Constant function, Identity function, Absolute value function, The Greatest integer functions, Trigonometric function, Exponential function, Logarithmic function
77	20 th	1 st	Unit-5 Define limit of a function and Existence of limit of a function.
78		2 nd	Unit-5 Algebra of limits
79		3 rd	Unit-5 Limit of some standard functions (without proof) ➤ $\lim_{x \rightarrow a} \frac{x^n - a^n}{x - a}$ ➤ $\lim_{x \rightarrow a} \frac{x^m - a^m}{x^n - a^n}$ ➤ $\lim_{x \rightarrow 0} \frac{x^m - 0^m}{x^n - 0^n}$ ➤ $\lim_{x \rightarrow 0} (1 + x)^{\frac{1}{x}}$
80		4 th	Unit-5 5.1.6 Limit of $ x $ and $[x]$.
81	21 st	1 st	Unit-5 Evaluation of limits using standard formulas
82		2 nd	Unit-5 Test of Continuity of a function at a point.
83		3 rd	Unit Test
84		4 th	2 nd Class test
85	22 nd	1 st	Unit-5 Differentiation Geometrical representation & Definition Method.
86		2 nd	Unit-5 Some methods of differentiation
87		3 rd	Unit-5 Differentiation of sum, product & quotient function
88		4 th	Unit-5 Differentiation exponential, Algebraic & Logarithm function
89	23 rd	1 st	Unit-5 Differentiation of Trigonometric function, Differentiation of Inverse Trigonometric function

90		2 nd	Unit-5 Differentiation using Logarithm
91		3 rd	Unit-5 Differentiation of composite function chain rule
92		4 th	Unit-5 Differentiation of parametric function
93	24 th	1 st	Unit-5 Differentiation of function w,r,t Another function
94		2 nd	Unit-5 Differentiation of implicit function
95		3 rd	Unit-5 Miscellaneous example solved
96		4 th	Unit-5 Problem solved on derivative
97	25 th	1 st	Class Test-Unit 4 & 5
98		2 nd	Unit-6 Integration of Indefinite methods
99		3 rd	Unit-6 Algebra of integration & problem solved
100		4 th	Unit-6 Integration by substitution method
101	26 th	1 st	Unit-6 Integration of Trigonometric formula
102		2 nd	Unit-6 Integration of Inverse Trigonometric formula
103		3 rd	Unit-6 Integration involving powers of trigonometrical function
104		4 th	Unit-6 Integration by Rationalisation
105	27 th	1 st	Unit-6 Integration by Trigonometrical Substitution
106		2 nd	Unit-6 Problem solved
107		3 rd	Unit-6 Integration by parts
108		4 th	Unit-6 Integration using partial function
109	28 th	1 st	Unit-6 Integration by further substitution method
110		2 nd	Unit-6 Definite integrals of some simple function
111		3 rd	Unit-6 Properties of definite integral

112		4 th	Unit-6 Fundamental theorem of integral
113	29 th	1 st	Unit-6 Problem solved on definite integral
114		2 nd	Unit -6 Application of definite integral, Area of plane curve
115		3 rd	Unit-6 Problem solved
116		4 th	Unit-6 Unit test of Integration
117	30 th	1 st	Unit-6 Introduction to Differential equations, Order & Degree of Differential Equation
118		2 nd	Unit-6 Formation of differential Equation
119		3 rd	Unit-6 Solution of Differential Equation
120		4 th	Unit-6 Particular solution of 1 st order & 2 nd order Differential Equation
121	31 st	1 st	Unit-6 Solution of Linear Differential Equation
122		2 nd	Unit-6 Solution of Homogeneous Differential Equation
123		3 rd	Unit-6 Equation reducible to homogeneous form
124		4 th	Unit-6 Problem Solved
125	32 nd	1 st	Unit-3 (3.4) Revision
126		2 nd	Unit-4 Revision
127		3 rd	Unit-5 Revision
128		4 th	3 rd Internal Test

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