

**GOVERNMENT POLYTECHNIC DARLIPALI, SUNDARGARH**

ସରକାରୀ ବହୁବୃତ୍ତି ଅନୁଷ୍ଠାନ ଦଲିପାଲି, ସୁନ୍ଦରଗଡ଼

GOVERNMENT OF ODISHA | ଓଡ଼ିଶା ସରକାର

A/ P: Darlipali , NTPC Darlipali ,Dist.: Sundargarh, Odisha- 758001

Website: <https://gpdarlipali.org.in/> in E-mail: gpdarlipali24@gmail.com**DEPARTMENT OF HUMANITIES & SCIENCES****LESSON PLAN (ACADEMIC SESSION 2025-26)**

Discipline: MATHEMATICS	Semester: 1st	Branch: ALL	Name of the teaching faculty: Sri MANAS MOHAN KERKETTA
Subject: MATHEMATICS	No of Days/Week class allotted: 4	Semester from Date: 06/08/2025 to 04/12/2025 No of weeks: 17 No. of Period Available: 60	
Month	Week	No of periods available	Class Day Theory topics to be covered
AUGUST	1st	2P	Point, Curve, Line Segment, Ray, Straight Line, Co-linear Points, Angle, Triangle: Sides, Height, Base, Perpendicular, Types of Triangle(According to sides and angles), Median, Centroid.
			Rectangle, Square, Parallelogram, Rhombus, Circle: Center, Radius,Diameter, Circumference, Arc; Plane, Sphere, Cuboid, Cube, Length, Area, Volume.
	2nd	3P	Algebra: Algebraic formula $(a + b)^2$, $(a - b)^2$, $(a + b)^3$, $(a - b)^3$, $a^2 - b^2$, $a^3 + b^3$, $a^3 - b^3$ etc. , Solution of simultaneous linear equation involving two variables $a_1x + b_1y + c_1 = 0$, $a_2x + b_2y + c_2 = 0$ Quadratic Equation, Quadratic Equation and its solution.
			Concepts of Polynomials with factorization (Including Polynomial Division)
			Inequalities
	3rd	4P	Sets, Subsets, Set of Real Numbers
			Subsets of Set of Real Numbers, Introduction to Complex Numbers
			Introduction to Cartesian co-ordinate system, Distance between two points (derivation and applications).
	4th	3P	Section Formula (Internal division and External division)
			Concept of angles, measurement of angles in degrees, grades and radians and their conversions,
			Introduction to Trigonometry, Trigonometric ratios in terms of Perpendicular, Base and Hypotenuse, Reciprocal of six trigonometric ratios
			Trigonometric table
	5th	3P	Quadrants (ASTC rule), Trigonometric identities
			T-Ratios of Allied angles (without proof),

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SEPTEMBER	6th	4P	Sum, difference formulae and their applications (without proof).
			T- Ratios of multiple angles, sub-multiple angles ($2A$, $3A$, $A/2$).
			Examples/Problems related to above formulae.
			Exponent and Rules of Exponent, Practice Problem.
			Logarithm
	7th	4P	Definition of Function with examples
			Domain, Codomain and Range of Functions, Natural Domain of Functions
			Natural Domain and Range of some Standard Functions, Introduction to Graphs of Functions
			Graphs of Trigonometric Function
	8th	4P	Graphs of Exponential Functions, Logarithmic Functions
			Examples of Some other Functions.
			Revision of Unit- I & II
			Revision of Unit- I & II
OCTOBER	9th	3P	Revision and Test
			Concept of Limits, Geometrical Interpretation of Limits, Examples of Limits of Functions.
			Four Standard Limits:
	10th	4P	Concept of Differentiation, Geometrical Interpretation.
			Differentiation of Standard Functions.
			Differentiation of sum, product and quotient of functions with examples
			Differentiation of function of a function

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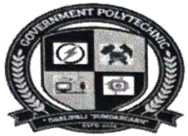
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OCTOBER	11th	3P	Differentiation of trigonometric and inverse trigonometric functions
			Differentiation of trigonometric and inverse trigonometric functions
			Logarithmic differentiation, Exponential functions.
	12th	4P	Revision of Unit- II
			Revision of Unit- II
			Revision and Test
			Introduction to Complex Numbers, Definition, real and imaginary parts of a Complex number, Addition, Subtraction,
NOVEMBER	13th	4P	Multiplication and Division of a complex number.
			conjugate of a complex number, modulus and amplitude of a complex number
			polar and Cartesian, representation of a complex number and its conversion from one form to other
			De-moivre's theorem, its application.
	14th	4P	Introduction to Partial Fractions
			Proper Fractions: Non-repeated Linear Factors
			Repeated & Quadratic Factors
			Improper Fractions to Partial Fractions
	15th	4P	Mixed Problem Practice
			Revision of Unit-III
			Permutations and Combinations: Value of nPr and nCr
			Binomial theorem (without proof) for positive integral index (expansion and general form);

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DECEMBER	16th	4P	binomial theorem for any index (expansion without proof)
			first and second binomial approximation with applications to engineering problems
			first and second binomial approximation with applications to engineering problems
			Revision of Unit- III
	17th	3P	Revision and Test
			Revision and Test
			Revision and Test

Manas Mohan Kerketta

Shri Manas Mohan Kerketta

Lect. Stage-I (Mathematics)

K. M. S. S. S.
HOD,

Humanities & Sc.

Principal,
28/12/25

Govt. Polytechnic, Darlipali