

**GOVERNMENT POLYTECHNIC DARLIPALI, SUNDARGARH**

ସରକାରୀ ବହୁବୃତ୍ତି ଅନୁଷ୍ଠାନ ଦର୍ଲିପାଲି, 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 25-26)**

Discipline: Mathematics	Semester: 2nd	Branch: ALL BRANCH	Name of the teaching faculty: MANAS MOHAN KERKETTA
Subject: Mathematics-II	No of Days/Week class allotted: 4	Semester from Date: 09/01/2026 to 08/05/2026 No of weeks: 17 No. of Period Available: 60	
Month	Week	No of periods available	Class Day Theory topics to be covered
JANUARY	1st	3P	Matrices
			Types of Matrices
			Determinants, Determinants of order 1, Determinants of order 2
	2nd	3P	Minors and Cofactor
			Expansion of a Determinant in terms of Minors and Cofactors, Determinants of order 3
			Properties of Determinants
	3rd	4p	Multiplication of Two Determinants, Nature of System of Linear Equations and Cramer's rule
			Nature of System of Linear Equations and Cramer's rule
			Algebra of Matrices
			Algebra of Matrices
FEBRUARY	4th	2p	The Transpose of a Matrix (Changing Rows and Columns)
			Orthogonal Matrix, Symmetric and Skew Symmetric Matrix,
	5th	3P	Inverse of a Matrix,
			Inverse of a Matrix, Matrix Method
			Singular and Non-Singular Matrices
			Unit test- I

FEBRUARY	6th	4P	Co-ordinate Geometry, Cartesian Co-ordinates System
			Straight Line, Equation of Vertical Lines, Equation of Horizontal Line, Equation of Horizontal Line
			Equation of Straight Line in Various Standard Forms
	7th	4P	Equation of Straight Line in Various Standard Forms
			Angle between Two Lines,
			Distance of Perpendicular from a Point on a Line, Distance between Two Parallel Lines
			Circle, General Equation of Circle , Characteristics of a Circle
MARCH	8th	4P	Find Equation of Circle Given- I) Centre and Radius, (II) Equation of a Circle through Three Given Points, (III) Equation of Circle in Diameter Form
			General Equation of a Conic, Parabola
			Hyperbola
			Ellipse
	9th	3P	UNIT TEST-II
			Integral Calculus, Integration as an Inverse Operation of Differentiation, Indefinite Integrals (Denoted by $\int$ Sign)
			Properties of Indefinite Integrals, Standard Results,
	10th	4P	Solved Examples based on Standard Results
			Integration By Substitution
			Integration by Parts
			Integration By Partial Fractions
	11th	3P	Definite Integrals, Some Common Properties of Definite Integrals
			Use of Walli's Integral Formula,
			Applications of Integration , Area Bounded by a Curve and Axes
	12th	4P	Volume of a Solid formed by Revolution of an Area about Axes (Using Disk Method)
			UNIT TEST-III
			Vector Algebra, Representation of Vectors
			Rectangular Resolution of a Vector

APRIL	13th	3P	Algebra of Vectors, Properties of Vector Addition
			Types of Vectors
			Types of Vectors,
			Dot product or Scalar product:
	14th	4P	Cross product or vector product of two vectors
			Cross product or vector product of two vectors, Applications of Vector Product
			UNIT TEST-IV
			Differential Equation, Basic Definitions/Concepts, Order and Degree of a Differential Equation
	15th	4P	Formation of a Differential Equation Whose General Solution is Given
			Solution of an Ordinary Differential Equation
			Solution of First Order and First Degree Differential Equation by Variable Separation Method
			Solution of First Order and First Degree Differential Equation by Variable Separation Method
	16th	4P	Matlab – An Introduction, Salient Features, Basics OF MATLAB
			Advantages of MATLAB, Disadvantages of MATLAB ,A few Keyboard shortcuts for MATLAB
			UNIT TEST-V
			REVISION OF UNIT-I
MAY	17th	4P	REVISION OF UNIT-II
			REVISION OF UNIT-III
			REVISION OF UNIT-IV
			REVISION OF UNIT-IV

Manas Mohan Kerketta
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 Lect. Stg. I (Mathematics)

dt. 06/01/20