

GOVERNMENT COLLEGE BAROTA GOHANA (SONIPAT)

Summary of Lesson Plans of College Faculty for Academic Session 2024 - 2025

Name of Assistant/Associate Professor:- Ms. Nikita Goel

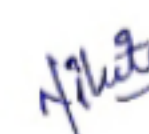
Class:- B.Com. I

Subject:- Business Mathematics (Mathematics) – Minor

Course code :- 24MAT402MI01

Semester:- Even Semester(2nd sem.)

Months	Week	Topics/ Chapters to be Covered
FEBRUARY	1 st week	Linear Programming-Formulation of LPP: Graphical method of solution.
	2 nd week	Problems relating to two variables including the case of mixed constraints.
	3 rd week	Cases having no solution, multiple solutions, unbounded solution and redundant constraints, Assignment.
	4 th week	Simplex Method—Solution of problems up to three variables, including cases of mixed constraints
MARCH	1 st week	Duality
	3 rd week	Transportation Problem, Test.
	4 th week	Compound Interest: Certain different types of interest rates
APRIL	1 st week	Concept of present value and amount of a sum.
	2 nd week	Concept of present value and amount of a sum ctd.
	3 rd week	Annuities: Types of annuities, Assignment.
	4 th week	Present value and amount of an annuity, including the case of continuous compounding
	5 th week	Valuation of simple loans and debentures.
MAY	1 st week	Problems relation to sinking funds, Test.
	2 nd week	Problems relation to sinking funds ctd.
	3 rd week	Revision and Test
	4 th week	Revision and Test



Signature

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Summary of Lesson Plans of College Faculty for Academic Session 2024 - 2025

Name of Assistant/Associate Professor:- Ms. Nikita Goel

Class:- B.A./B.Sc. III

Subject:- Linear Algebra (Mathematics)

Semester:- Even Semester

Months	Week	Topics/ Chapters to be Covered
JANUARY	1 st week	Vector spaces, subspaces, Sum and Direct sum of subspaces.
	2 nd week	Linear span, Linearly Independent and dependent subsets of a vector space. Finitely generated vector space, Existence theorem for basis of a finitely generated vector space.
	3 rd week	Finite dimensional vector spaces, Invariance of the number of elements of bases sets, Dimensions, Quotient space and its dimension, Test.
	4 th week	Homomorphism and isomorphism of vector spaces.
FEBRUARY	1 st week	Linear transformations and linear forms on vector spaces, Vector space of all the linear transformations.
	2 nd week	Annihilator of subspaces of finite dimensional vector spaces, Null Space.
	3 rd week	Range space of a linear transformation, Rank and Nullity Theorem, Dual Spaces, Bidual spaces, Assignment.
	4 th week	Algebra of Linear Transformation, Minimal Polynomial of a linear transformation, Singular and non-singular linear transformations.
MARCH	1 st week	Matrix of a linear Transformation, Change of basis.
	3 rd week	Eigen values and Eigen vectors of linear transformations, Test.
	4 th week	Inner product spaces.
APRIL	1 st week	Cauchy-Schwarz inequality, Orthogonal vectors, Orthogonal complements, Orthogonal sets and Basis.
	2 nd week	Bessel's inequality for finite dimensional vector spaces, Gram-Schmidt, Orthogonalization process, Assignment
	3 rd week	Adjoint of a linear transformation and its properties, Unitary linear transformations.
	4 th week	Revision and Test
MAY	1 st week	Revision and Test

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Summary of Lesson Plans of College Faculty for Academic Session 2024 - 2025

Name of Assistant/Associate Professor:- Ms. Nikita Goel

Class:- B.A./B.Sc. I

Subject:- Calculus (Mathematics)

Course code :- 24MATM402DS01

Semester:- Even Semester(2nd sem.)

Months	Week	Topics/ Chapters to be Covered
FEBRUARY	1 st week	Limit and Continuity (ϵ - δ definition), Discontinuity & its types.
	2 nd week	Differentiability of the functions, Successive differentiation.
	3 rd week	Leibnitz rule and its applications, L' Hospital's rule: Indeterminate forms, Assignment.
	4 th week	Taylor's theorem with Lagrange's and Cauchy's forms of remainders, Maclaurin's and Taylor's series expansions.
MARCH	1 st week	Tangent and Normal, Asymptotes of Curves in Cartesian and polar co-ordinates, Test.
	3 rd week	Curvature, Radius of Curvature for Cartesian curves, parametric curves.
	4 th week	Polar and pedal form of curves, Circle of Curvature.
APRIL	1 st week	Chord of Curvature. Concavity, Convexity and Inflexion points, Test.
	2 nd week	Tracing of curves in Cartesian co-ordinates of Standard curves.
	3 rd week	Tracing of curves in polar co-ordinates of Standard curves.
	4 th week	Tracing of curves in parametric co-ordinates of Standard curves.
	5 th week	Functions of Several Variables, Limits and Continuity, Assignment.
MAY	1 st week	Partial Differentiation and Euler's theorem on homogenous functions, Chain rule.
	2 nd week	Directional derivatives, Gradient vector and Tangent Plane.
	3 rd week	Revision and Test
	4 th week	Revision and Test

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Summary of Lesson Plans of College Faculty for Academic Session 2024 - 2025

Name of Assistant/Associate Professor:- Ms. Nikita Goel

Class:- B.A./B.Sc. II

Subject:- Special Functions and Integral Transforms (Mathematics)

Semester:- Even Semester

Months	Week	Topics/ Chapters to be Covered
JANUARY	1 st week	Laplace Transforms – Existence theorem for Laplace transforms, Linearity of the Laplace transforms, Shifting theorems.
	2 nd week	Laplace transforms of derivatives and integrals, Differentiation and integration of Laplace transforms, Convolution theorem
	3 rd week	Inverse Laplace transforms, Inverse Laplace transforms of derivatives and integrals.
	4 th week	Solution of ordinary differential equations using Laplace transform, Test, Fourier transforms: Linearity property, Shifting, Modulation.
FEBRUARY	1 st week	Convolution Theorem, Fourier Transform of Derivatives, Relations between Fourier transform and Laplace transform, Parseval's identity for Fourier transforms.
	2 nd week	Solution of differential Equations using Fourier Transforms, Assignment.
	3 rd week	Series solution of differential equations – Power series method.
	4 th week	Series solution of differential equations ctd..
MARCH	1 st week	Beta and Gamma functions. Bessel equation and its solution: Bessel functions and their properties-Convergence, recurrence.
	3 rd week	Relations and generating functions, Orthogonality of Bessel functions, Test.
	4 th week	Legendre and Hermite differentials equations and their solutions: Legendre and Hermite functions, Assignment.
APRIL	1 st week	Legendre and Hermite functions and their properties-Recurrence Relations and generating functions.
	2 nd week	Orthogonality of Legendre and Hermite polynomials, Rodrigues' Formula for Legendre & Hermite Polynomials.
	3 rd week	Laplace Integral Representation of Legendre polynomial.
	4 th week	Revision and Test
MAY	1 st week	Revision and Test



Signature