GOVT. COLLEGE BAROTA

LESSON PLAN OF MATHEMATICS(2023-24)(EVEN SEM.)

Name of Assistant Professor: Ms. Nikita Goel

Class: B.A. & B.SC. (4th Sem.)

Subject: Special Functions and Integral Transforms

MONTH	WEEK	SYLLABUS
JANUARY	WEEK 1	Laplace Transforms – Existence theorem for Laplace transforms, Linearity of the Laplace transforms, Shifting theorems.
	WEEK 2	Laplace transforms of derivatives and integrals, Differentiation and integration of Laplace transforms.
	WEEK 3	Convolution theorem, Inverse Laplace transforms, Inverse Laplace transforms of derivatives and integrals.
	WEEK 4	Solution of ordinary differential equations using Laplace transform, Test, Fourier transforms: Linearity property, Shifting, Modulation.
	WEEK 5	Convolution Theorem, Fourier Transform of Derivatives.
FEBRUARY	WEEK 1	Relations between Fourier transform and Laplace transform, Parseval's identity for Fourier transforms.
	WEEK 2	Solution of differential Equations using Fourier Transforms, Assignment,
	WEEK 3	Series solution of differential equations – Power series method.
	WEEK 4	Series solution of differential equations ctd..
	WEEK 5	Beta and Gamma functions. Bessel equation and its solution: Bessel functions and their properties-Convergence, recurrence.
MARCH	WEEK 1	Relations and generating functions, Orthogonality of Bessel functions, Test.
	WEEK 2	Legendre and Hermite differentials equations and their solutions: Legendre and Hermite functions.
	WEEK 3	Legendre and Hermite functions and their properties-Recurrence Relations and generating functions.
APRIL	WEEK 1	Orhogonality of Legendre and Hermite polynomials.
	WEEK 2	Rodrigues' Formula for Legendre & Hermite Polynomials.
	WEEK 3	Laplace Integral Representation of Legendre polynomial, Assignment.
	WEEK 4	Revision and Test
	WEEK 5	Revision and Test

Signature