Govt. College Sihma, Mahendergarh
Lesson Plan (Session 2021-22)

Name - Sarita Yadav   **Subject- Mathematics**

Paper Name – Special Functions and Integral Transforms

Class - B.A. 2nd year

21st March – 20 April
Unit – 1st
Series solution of differential equations – Power series method, Definitions of Beta and Gamma functions. Bessel equation and its solution: Bessel functions and their properties-Convergence, recurrence, Relations and generating functions, Orthogonality of Bessel functions.

20 April – 10 May
Unit - 2nd
Legendre and Hermite differentials equations and their solutions: Legendre and Hermite functions and their properties-Recurrence Relations and generating functions. Orhogonality of Legendre and Hermite polynomials. Rodrigues' Formula for Legendre & Hermite Polynomials, Laplace Integral Representation of Legendre polynomial.

10 May – 20 May
Unit - 3rd
Laplace Transforms – Existence theorem for Laplace transforms, Linearity of the Laplace transforms, Shifting theorems, Laplace transforms of derivatives and integrals, Differentiation and integration of Laplace transforms, Convolution theorem, Inverse Laplace transforms, Convolution theorem, Inverse Laplace transforms of derivatives and integrals, solution of ordinary differential equations using Laplace transform.

20 May Onwards
Unit - 4th
Fourier transforms: Linearity property, Shifting, Modulation, Convolution Theorem, Fourier Transform of Derivatives, Relations between Fourier transform and Laplace transform, Parseval's identity for Fourier transforms, solution of differential Equations using Fourier Transforms.