


Curriculum Plan (EVEN SEM 2024-25): B.Sc.(H) Maths VI Sem

DSE-4(ii): Integral Transforms

Teacher'S Profile Hari Kishan Bhardwaj Department of Mathematics, Kalindi College, University of Delhi, Delhi- 110008 Mobile: +91-9868053327 Email: harikishan@kalindi.du.ac.in			Marks Distribution	Theory	90 Marks
				Internal Assessment	30 Marks
				Continuous Assessment	40 Marks
			Classes Assigned		Assignments -12 Marks
					Test - 12 Marks
					Attendance - 6 Marks
		Lectures	3 Per Week		
		Tutorial	2 Per Week		
Reference		1. Tyn Myint-U & Lokenath Debnath (2007). Linear Partial Differential Equations for Scientists and Engineers (4th ed.). Birkhauser. Indian Reprint. 2. Lokenath Debnath & Dambaru Bhatta (2015). Integral Transforms and Their Applications (3rd ed.). CRC Press Taylor & Francis Group.			
	Week	Topics			
	1 st Week (2-11 JAN)	Piecewise continuous functions and periodic functions			
	2 nd Week (13-18 JAN)	Systems of orthogonal functions, Fourier series, Convergence of Fourier series.			
	3 rd Week (20-25 JAN)	Examples and applications of Fourier series, Fourier cosine series and Fourier sine series			
	4 th Week (27 JAN-01 FEB)	The Gibbs phenomenon, Complex Fourier series, Fourier series on an arbitrary interval.			
	5 th Week (3-8 FEB)	The Riemann-Lebesgue lemma, Pointwise convergence, uniform convergence			
	6 th Week (10-15 FEB)	Differentiation, and integration of Fourier series; Fourier integrals.			
	7 th Week (17- 22 FEB)	Fourier transforms, Properties of Fourier transforms, Convolution theorem of the Fourier transform			
	8 th Week (24 FEB-1 MAR)	Fourier transforms of step and impulse functions, Fourier sine and cosine transforms			
	9 th Week (3-8 MAR)	Convolution properties of Fourier transform.			
	10 th Week (17-22 MAR)	Laplace transforms, Properties of Laplace transforms, Convolution theorem of the Laplace transform			
	11 th Week (24 -29 MAR)	Convolution properties of the Laplace transform, Laplace transforms of the Heaviside and Dirac delta functions.			
	12 th Week (31 MAR-5 APR)	Finite Fourier transforms and applications			
	13 th Week (7-12 APR)	Applications of Fourier transforms to ordinary differential equations and partial differential equations.			
	14 th Week (14-19 APR)	Applications of Laplace transform to ordinary differential equations			
	15 th Week (21–26 APR)	Applications of Laplace transform to partial differential equations, initial and boundary value problems.			
	16 th Week (28-30 APR)	Revision			