


Curriculum Plan (EVEN SEM 2024-25): B.Sc.(H) Maths IV Sem
DSC-11: Multivariate Calculus

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
					Assignments -12 Marks
		Classes Assigned		Test - 12 Marks	
				Attendance - 6 Marks	
			Lectures	2 Per Week	
	Tutorial	1 Per Week			

Reference		Essential Reading <ul style="list-style-type: none">Strauss, Monty J., Bradley, Gerald L., & Smith, Karl J. (2007). Calculus (3rd ed.). Dorling Kindersley (India) Pvt. Ltd. Pearson Education. Indian Reprint. Suggestive Reading <ul style="list-style-type: none">Marsden, J. E., Tromba, A., & Weinstein, A. (2004). Basic Multivariable Calculus. Springer (SIE). Indian Reprint.	
	Week	Topics	
	1 st Week (2-11 JAN)	Definition and examples of function of two variables, Level curves and surfaces	
	2 nd Week (13-18 JAN)	Limits and continuity of functions of two variables.	
	3 rd Week (20-25 JAN)	Partial differentiation and partial derivatives as slope and rate	
	4 th Week (27 JAN-01 FEB)	Higher order partial derivatives.	
	5 th Week (3-8 FEB)	Tangent planes, Total differential	
	6 th Week (10-15 FEB)	Differentiability, Chain rule for one independent variable.	
	7 th Week (17- 22 FEB)	Extensions of the chain rule to two independent parameters	
	8 th Week (24 FEB-1 MAR)	Directional derivatives and the gradient,	
	9 th Week (3-8 MAR)	Maximal and normal property of the gradient, Tangent planes and normal lines.	
	10 th Week (17-22 MAR)	Extrema of functions of two variables	
	11 th Week (24 -29 MAR)	Lagrange multipliers method for optimization problems with one constraint.	
	12 th Week (31 MAR-5 APR)	Double integration over rectangular regions.	
	13 th Week (7-12 APR)	Double integration over nonrectangular regions, Double integrals in polar coordinates.	
	14 th Week (14-19 APR)	Triple integral over a parallelopiped, Triple integral over solid regions, Volume by triple integrals.	
	15 th Week (21–26 APR)	Triple integration in cylindrical and spherical coordinates.	
	16 th Week (28-30 APR)	Revision	