

**Curriculum Plan (EVEN SEM 2025-26): B.A.(P) VIII Sem
DSC-8: Topics in 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	
				Assignments -12 Marks Test - 12 Marks Attendance - 6 Marks	
		Classes Assigned		Continuous Assessment	40 Marks
				Lectures	3 Per Week
				Tutorial	1 Per Week
	Reference Books	1. Strauss, Monty J., Bradley, Gerald L., & Smith, Karl J. (2007). Calculus (3rd ed.). Dorling Kindersley (India) Pvt. Ltd. (Pearson Education). Delhi. Indian Reprint 2011.			
	Week	Topics			
	1 st Week (02 JAN-10 JAN)	Definition and examples of function of two variables, Limits and continuity of functions of two variables.			
	2 nd Week (12 JAN-17 JAN)	Partial differentiation and partial derivatives as slope and rate (definitions only), Higher order partial derivatives.			
	3 rd Week (19 JAN-24 JAN)	Tangent planes, Total differential, Differentiability, Chain rule for one independent variable.			
	4 th Week (26 JAN-31 JAN)	Extensions of the chain rule to two independent parameters, Directional derivatives			
	5 th Week (2 FEB-7 FEB)	Gradient, Maximal and normal property of the gradient.			
	6 th Week (9 FEB-14 FEB)	Extrema of functions of two variables, Lagrange multipliers method for optimization problems with one constraint..			
	7 th Week (16 FEB-21 FEB)	Double integration over rectangular regions, and nonrectangular regions			
	8 th Week (23 FEB-28 FEB)	Double integrals in polar coordinates			
	9 th Week (9 MAR-14 MAR)	Triple integral over a parallelepiped, and solid regions, Volume by triple integrals.			
	10 th Week (16 MAR-21 MAR)	Triple integration in cylindrical and spherical coordinates.			
	11 th Week (23 MAR -28 MAR)	Jacobians: Change of variables in double and triple integrals.			
	12 th Week (30 MAR-4 APR)	Line integrals, Applications of line integrals to mass and work, Fundamental theorem for line integrals, Conservative vector fields.			
	13 th Week (6 APR-11 APR)	Green's theorem, Area as a line integral.			
	14 th Week (13 APR-18 APR)	Surface integrals.			
	15 th Week (20 APR-25 APR)	Stokes' theorem (statement only) and Gauss divergence theorem (statement only).			
	16 th Week (27 APR-30 APR)	REVISION			