Curriculum Plan (2025-26 EVEN SEM): B. Sc. (H) Mathematics II Year. (MULTIVARIATE CALCULUS)

Teacher Profile
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PHOTO

Marks Distribution	**Theory** 90 Marks
	Internal Assessment 30 Marks
	Total Marks
	Lectures 3 per week.

Reference		**M.J.STRAUSS, G.L. BRADLEY AND K.J. SMITH, CALCULUS (3RD EDITION), PEARSON EDUCATION, DELHI-07**	
	Week	**Topics(THEORY)**	**PRACTICAL.**
	1st week	*FUNCTIONS OF SEVEREL VARIABLES.* *LIMIT AND CONTINUITY OF FUNCTIONS OF TWO VARIABLES.*	
	2nd week	PARTIAL DIFFERENTIATION. TOTAL DIFFERENTIABILITY AND DIFFERENTIABILITY. SUFFICIENT CONDITION FOR DIFFERENTIABILITY.	
	3rd week	CHAIN RULE FOR ONE AND TWO INDEPENDENT PARAMETERS. DIRECTIONAL DERIVATIVES.THE GRADIENT. MAXIMAL AND NORMAL PROPERTY OF THE GRADIENT. TANGENT PLANES.	
	4th week	EXTREMA OF FUNCTIONS OF TWO VARIABLES OF TWO VARIABLES. METHOD OF LAGRANGE MULTIPLIERS. CONSTRAINED OPTIMIZATION PROBLEMS. DEFINITION OF VECTOR FIELD. DIVERGENCE AND CURL.	
	5th week	DOUBLE INTEGRATION OVER RECTANGULAR REGION. DOUBLE INTEGRATION OVER NON-RECTANGULAR REGION.	
	6th week	DOUBLE INTEGRAL IN POLAR COORDINATES. TRIPLE INTEGRALS. TRIPLE INTEGRAL OVER A PARALLELEPIPED AND SOLID REGIONS.	
	7th week	VOLUME BY TRIPLE INTEGRALS. CYLINDRICAL AND SPHERICAL COORDINATES.	
	8th week	CHANGE OF VARIABLES IN DOUBLE INTEGRALS AND TRIPLE INTEGRALS.	
	9th week	LINE INTEGRALS. APPLICATIONS OF LINE INTEGRALS. MASS AND WORK.	

	10th week.	FUNDAMENTAL THEOREM FOR LINE INTEGRALS. CONSERVATIVE VECTOR FIELDS.	
	11th week	INDEPENDENCE OF PATH. GREEN'S THEOREM. SURFACE INTEGRALS.	
	12th week	INTEGRALS OVER PARAMETRICALLY DEFINED SURFACES.	
	13th week	STOKES'S THEOREM.	
	14th week/ 15TH week	DIVERGENCE THEOREM.	