


Curriculum Plan (ODD SEM 2022): B. Sc. (H) Mathematics II Year. (MULTIVARIATE CALCULUS)

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			Internal Assessment	Assignments- 10 Marks Test- 10 Marks Attendance- 5 Marks	
		Practical	50 Marks	Total Marks	150
		Lectures 4 per week. Practical 4 per week.			
Reference		M.J.STRAUSS, G.L. BRADLEY AND K.J. SMITH, CALCULUS (3RD EDITION), PEARSON EDUCATION, DELHI-07			
	Week	Topics(THEORY)	PRACTICAL.		
	Beginning days/ 1st week 26 AUG-3 SEP	FUNCTIONS OF SEVEREL VARIABLES. LIMIT AND CONTINUITY OF FUNCTIONS OF TWO VARIABLES.	1.TO DRAW THE SURFACES AND TO FIND LEVEL CURVES.		
	2nd week 5-10 SEP	PARTIAL DIFFERENTIATION. TOTAL DIFFERENTIABILITY AND DIFFERENTIABILITY. SUFFICIENT CONDITION FOR DIFFERENTIABILITY.			
	3rd week 12-17 SEP	CHAIN RULE FOR ONE AND TWO INDEPENDENT PARAMETERS. DIRECTIONAL DERIVATIVES.THE GRADIENT. MAXIMAL AND NORMAL PROPERTY OF THE GRADIENT. TANGENT PLANES.	2. TO DRAW SURFACES AND TO FIND LIMIT.		
	4th week 19-24 SEP	EXTREMA OF FUNCTIONS OF TWO VARIABLES OF TWO VARIABLES. METHOD OF LAGRANGE MULTIPLIERS. CONSTRAINED OPTIMIZATION PROBLEMS. DEFINITION OF VECTOR FIELD. DIVERGENCE AND CURL.	3.TO DRAW TANGENT PLANE OF THE SURFACES AT GIVEN POINT.		
	5th week 26 SEP- 1 OCT	DOUBLE INTEGRATION OVER RECTANGULAR REGION. DOUBLE INTEGRATION OVER NON-RECTANGULAR REGION.	5. TO FIND CRITICAL POINTS AND IDENTIFY RELATIVE MAXIMA AND MINIMA OR SADDLE POINTS.		
	6th week 3-8 OCT	DOUBLE INTEGRAL IN POLAR COORDINATES. TRIPLE INTEGRALS. TRIPLE INTEGRAL OVER A PARALLELEPIPED AND SOLID REGIONS.	6. TO DRAW REGIONS D.		
	7th week 10-15 OCT	VOLUME BY TRIPLE INTEGRALS. CYLINDRICAL AND SPHERICAL COORDINATES.	7. CONDITION TO SATISFY THE INEQUALITY.		
	8th week 17-22 OCT	CHANGE OF VARIABLES IN DOUBLE INTEGRALS AND TRIPLE INTEGRALS.	8. LIMIT OF THE FUNCTIONS WHEN TENDS TO 0.		
	9th week 25-29 OCT	LINE INTEGRALS. APPLICATIONS OF LINE INTEGRALS. MASS AND WORK.	9. LIMIT OF THE FUNCTION TENDS TO INFINITY.		

	10th week. 31 OCT- 5 NOV	FUNDAMENTAL THEOREM FOR LINE INTEGRALS. CONSERVATIVE VECTOR FIELDS.	10. VERIFICATION OF MAXIMUM- MINIMUM THEOREM
	11th week 7-12 NOV	INDEPENDENCE OF PATH. GREEN'S THEOREM. SURFACE INTEGRALS.	11. VERIFICATION OF FIRST DERIVATIVE TEST.
	12th week 14-19 NOV	INTEGRALS OVER PARAMETRICALLY DEFINED SURFACES.	12. TAYLOR'S SERIES.
	13th week 21-26 NOV	STOKES'S THEOREM.	
	14th week 28 NOV- 3 DEC	DIVERGENCE THEOREM.	
5- 12 DEC (15 TH and 16 TH Week)- REVISION.			