

Course Plan:

Lecture No	Learning Objectives	Topics to be covered	Refer to Chapter
1-3	Successive differentiation, Leibnitz theorem, Taylor's and Maclaurin's theorems with remainders, Indeterminate forms	Differential Calculus	4(A)
4-7	Concavity and Convexity of a curve, points of inflexion, Asymptotes	Differential Calculus	19(B)
8-10	Curvature	Differential Calculus	15(B)
11-14	Limit, continuity and Differentiability of function of several variables, Partial derivatives and their geometrical interpretation, Directional derivatives of composite and implicit functions	Analysis	5(A)
15-18	Euler's theorem on homogeneous functions, harmonic function, Taylor's expansion of functions of several variables	Analysis	5(A)
19-22	Maxima and Minima of functions of several variables, Lagrange's method of multipliers	Analysis	5(A)
23-25	First order differential equations: Exact, Linear and Bernoulli's form	Differential Equations	11(A)
26-30	Second order differential equations with constant coefficients, Method of undetermined coefficients, Variation of parameters, Euler's equations, system of differential equations	Differential Equations	13(A)
31-34	Review of Limit, Continuity, Differentiability of functions of complex variables, Analyticity of functions, Cauchy-Riemann equations, Harmonic functions	Complex Analysis	19(A)
35-38	Reduction formula for indefinite and definite integrals of type $\sin^n x$, $\cos^n x$ and their evaluation.	Integral Calculus	20(A)
39-44	Reduction formula for indefinite and definite integrals of type $\sin^m x \cos^n x$ and their evaluation.	Integral Calculus	20(A)

Evaluation Scheme:

EC No	Evaluation Component	Duration	Weightage	Date and Time	Nature of Component
1	Mid Sem Exam	2 hours	30 %	As per Academic Calender	
2	End Sem Exam	3 hours	50 %	As per Academic Calender	
3	Assignment		10 %		
4	Surprise Quiz	10 min	10 %		

Chamber Consultation hour: Tuesday: 10.00 am to 1.00 pm

Notices: All notices regarding the course will be displayed on the Notice Board of Department of Mathematics.

Instructor In-charge

Dr Ramayan Singh