



Indraprastha College for Women University of Delhi

Work Plan for ODD SEMESTER – 2026

Course Name:	B.Sc. (H) OTHER THAN Mathematics	
Paper Title:	GEC-FUNDAMENTALS OF CALCULUS	
Unique Paper Code:	2354001001	
Semester:	I	
Faculty:	Monika Bansal	
Year:	2026-2027	

Work Plan			
Unit No.	Learning Objective	Lecture No.	Topics to be Covered
I	UNDERSTAND CONTINUITY AND DIFFERENTIABILITY IN TERMS OF LIMITS	1-6	Weeks 1 TO 6: Limits and continuity, Types of discontinuities. [1] Chapter 1 (Theorems without proofs). [2] Chapter 2 (Section 2.7).
I	UNDERSTAND CONTINUITY AND DIFFERENTIABILITY IN TERMS OF LIMITS	7-9	Week 7,8,9: Differentiability of functions. [1] Chapter 2 (Section 2.2). [2] Chapter 3 (Section 3.2).
III	STUDYING BEHAVIOUR OF FUNCTIONS LOCATING EXTREMA, GRAPHING POLYNOMIAL AND RATIONAL FUNCTIONS	10-14	Concavity and inflexion points, Asymptotes (parallel to axes and oblique). [1] Chapter 3 [Section 3.1 (3.1.3 to 3.1.5)]. [2] Chapter 9 (Sections 9.1 to 9.4). Relative extrema, Tracing graphs of polynomial and rational functions. [1] Chapter 3 (Sections 3.2 and 3.3), and Chapter 10 (Section 10.2).

Unit	Contents/Syllabus
I	Limits and continuity, Types of discontinuities. Differentiability of functions. Successive differentiation, Leibnitz theorem. Partial differentiation, Euler's theorem on homogeneous functions.

II	Rolle's theorem, Mean value theorems and applications to monotonic functions and inequalities. Taylor's theorem with Lagrange's and Cauchy's forms of remainders, Definition and examples of convergent sequences and series, Taylor's series, Maclaurin's series expansion of e^x , $\sin x$, $\cos x$, $\log(1+x)$, and $(1+x)^n$. Indeterminate forms.
III	Concavity and inflexion points, Asymptotes (parallel to axes and oblique). Relative extrema, Tracing graphs of polynomial and rational functions.
S. No.	Name of Authors/Books/Publishers
1.	. Anton, Howard, Bivens, Irl, & Davis, Stephen (2013). <i>Calculus</i> (10th ed.). Wiley India Pvt. Ltd. New Delhi. International Student Version. Indian Reprint 2016.
2.	Prasad, Gorakh (2016). <i>Differential Calculus</i> (19th ed.). Pothishala Pvt. Ltd. Allahabad.
3.	
4.	

Paper Components			
Credits	Lecture (L)	Tutorial (T)	Practical (P)
4	3	1	NA
Assessment Scheme			
S.No.	Component	Marking Scheme	Total Marks
1	Internal Assessment	30	30

	• Assignment • Class Test • Attendance	12	40
		12	
		6	
2.	Continuous Assessment (Tutorial)	40	40
		35	
		NA	
		5	
3.	Practical • Continuous Assessment • End Term Written/Practical Exam • Viva	NA	
4.	End Semester Examination		90