

B.A (MATHEMATICS- CALCULUS)

Semester-1 (2024-25)

LESSON PLAN

Max. Marks- 100

Time- 3 Hours

Course Content:

Month: July –November

Weeks	Topics
July (Week 1)	Definition of limit and continuity of a real valued function, Basic properties of limits, Types of discontinuities
August ( Week 2)	Differentiability of functions, Application of L' Hospital rule to indeterminate forms.
August ( Week 3)	Doubt session and class test
August (Week 4)	Successive differentiation, Leibnitz theorem.
August (Week 5)	Taylor's and Maclaurin's series expansion with different forms of remainder.
September (Week 6)	Doubt session and class test
September ( Week 7)	Asymptotes: Horizontal, vertical and oblique asymptotes for algebraic curves, polar curves, Intersection of a curve and its asymptotes.
September ( Week 8)	Curvature and radius of curvature of curves ( Cartesian, parametric, polar& intrinsic forms), Newton's method, Centre of curvature and circle of curvature.
September (Week 9)	Doubt session , class test and class presentation.
October (Week 10)	Multiple points, Node, Cusp, Conjugate point, Quadrature.
October (Week 11)	Tests for concavity and convexity, points of inflexion, Tracing of curves.

October ( Week 12)	Reduction formulae, Rectification, intrinsic equation of a curve.
October ( Week 13)	Doubt class and class test.
November (Week 14)	Area bounded by closed curves, volumes and surfaces of solids of revolution.
November (Week 15)	Doubt session and Revision