Successive Differentiation: Higher order derivatives, $n^{th}$ derivatives of standard functions, $n$th derivatives of rational functions, Leibnitz theorem.

Applications of Derivatives: Mean value theorems and their geometrical interpretation, Cartesian graphing using first and second order derivatives, Asymptotes and dominant terms, Graphing of polar curves, Polar equations for conic sections.


Series Expansions: Power series, Taylor series, Convergence of Taylor series, Error estimates, Term by term differentiation and integration, Multiplication and division process in power series.

Partial Differentiation: Functions of several variables, Limits and continuity, Chain rule, Change of variables, Partial differentiation of implicit functions, Taylor series of two variables, Directional derivatives and its properties, Maxima and minima by using second order derivatives.

Multiple Integrals: Change of order of integration, Change of variables, Applications of multiple integrals to areas and volumes.


Text Books

Reference Books