



Department of Mathematics
Faculty of Sciences, Jamia Millia Islamia

Multidisciplinary Paper in Mathematics
(2024-25)
Course Structure and Syllabus

Semester	Code	Title of the Paper	Credits
II	24MATT151	Elementary Calculus	3

24MATT151 Elementary Calculus

Unit-I	Function, limit of a function, algebra of limits. Continuity and Differentiability of a function, Taylor's and McLaurin's series, Maxima and minima of a function of one variable,
Unit-II	Partial derivatives, applications of partial derivatives, Euler's theorem on homogeneous functions, Asymptotes, Test of concavity and convexity, Points of inflexion, multiple points.
Unit-III	Integral of irrational and trigonometric functions, properties of definite integrals, Reduction formulae, Quadrature, Rectification.

Books Recommended

1. Howard Anton, Calculus, John Wiley & Sons, 2012.
2. George B. Thomas, Ross L. Finney, Calculus 11Ed., Pearson Education, 2008.
3. Gorakh Prasad: *Differential Calculus*, Pothishalas Pvt Ltd, Allahabad.
4. Shanti Narayan: *Differential Calculus*, S. Chand & Co.
5. Shanti Narayan: *Integral Calculus*, S. Chand & Co.
6. Khalil Ahmad: *Text Book of Calculus*, World Education Publishers, 2012.

Note: Only for the students who do not have Mathematics papers as Major or Minor.