

LESSON PLAN

Session 2024-25

Subject- Mathematics Class- B.Sc. Maths Major 1st Year(Sem--1)

Paper- Advanced Calculus Course Code - B23-MAT-102

22 July 2024 to 24 August 2024

Continuity, Sequential Continuity, properties of continuous functions, Uniform continuity, chain rule of differentiability. Mean value theorems; Rolle's Theorem and Lagrange's mean value theorem and their geometrical interpretations. Taylor's Theorem with various forms of remainders.

26 August 2024 to 14 September 2024

Limit and continuity of real valued functions of two variables. Partial differentiation. Total Differentials; Composite functions & implicit functions. Change of variables. Homogenous functions & Euler's theorem on homogeneous functions. Taylor's theorem for functions of two variables.

16 September 2024 to 05 October 2024

Differentiability of real valued functions of two variables. Schwarz and Young's theorem. Implicit function theorem. Maxima, Minima and saddle points of two variables. Lagrange's method of multipliers.

07 October 2024 to 26 October 2024

Jacobians. Beta and Gamma functions, Relation between Beta and Gamma functions, Legendre's duplication formula. Double integration over rectangular and non-rectangular regions, Double integrals in polar co-ordinates. Change of order of integration. Volume by triple integrals, Triple integration in cylindrical and spherical co-ordinates.

04 November 2024 to 22 November 2024

Dirichlet integrals, Liouville's extension of Dirichlet's integral. **Revision**

SUDHIR PUJARA

(Associate Professor in Mathematics)