EduPaper Archive

RGPV B.Tech – First Year Syllabus

BT-102: Mathematics-I

Unit I: Differential Calculus

- Successive differentiation
- Leibnitz's theorem
- Taylor's and Maclaurin's series
- Asymptotes, curvature, concavity, convexity
- Points of inflection

Unit II: Partial Differentiation

- Euler's theorem
- Total derivative, change of variables
- Jacobians
- Taylor's theorem for functions of two variables
- Maxima and minima of functions of two variables
- Lagrange's method of multipliers

Unit III: Multiple Integrals

- Double and triple integrals
- Change of order and change of variables
- Applications: area, volume, center of gravity, moment of inertia

Unit IV: Vector Calculus

- Differentiation of vectors
- Gradient, divergence, curl
- Line, surface, and volume integrals
- Green's theorem, Gauss's divergence theorem, Stokes' theorem

Unit V: Linear Algebra

- Rank of a matrix, normal forms
- Consistency of system of linear equations
- Eigenvalues and eigenvectors
- Cayley-Hamilton theorem
- Diagonalization of matrices

📥 Download Official Syllabus

- [RGPV Notes – BT-102 Breakdown](#)
- [Career Shiksha – BT-102 Question Papers](#)