



## **SNUCEE 2025: MATHEMATICS SYLLABUS FOR B. TECH**

**Sets** - Relations & Functions

**Trigonometry** - Properties of Triangles; Trigonometry - Trigonometric Functions, Trigonometric Identities, Trigonometric Equations, Inverse Trigonometric Functions

**Combinatorics** - Permutations, Combinations - Principles of Counting, Mathematical Induction

**Basic Algebra** - Quadratic Functions, Polynomial Functions- Linear Inequalities -Sequences and Series - Binomial Theorem.

**Two-dimensional Analytical Geometry** - Straight lines, Circles; Two-dimensional Analytical Geometry - Ellipse, Parabola, Hyperbola

**Vector Algebra** - Vector Product & Scalar Product, the Product of Three Vectors, Skew Lines, Planes

**Mathematical Logic** - Logic, Contradiction, and Contrapositive

**Complex Numbers** - Complex Form - Conjugate, Modulus - Polar Form

**Differential Calculus** - Limits and Continuity, Differentiability, Mean Value Theorem, Rolle's Theorem - Maxima and Minima, Euler's Theorem

**Integral Calculus** - Evaluation - Substitution, Partial Fractions, Integration by Parts - Definite Integrals as a Limit of a Sum, Properties of Definite Integrals - Applications of Integrals in Finding Area

**Matrices & Determinants** - Matrices - Types of Matrices - Operations - Determinants - Properties of Determinants - an Inverse of a Matrix - Rank - Consistency & Inconsistency, Solution of a System of Equations

**Probability** - Probability Basics - Conditional Probability - Total Probability - Baye's Theorem - Random variable - Bernoulli Distribution and Binomial Distribution

**Differential Equations** - Order, Degree - Solution of a Homogenous Equation of First Order and First Degree - Method of Separation of Variables

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