



SNUCEE 2027: 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
