

MS (CS), MS (DS) & PhD (CS) Mathematics Entry Test Syllabus

Topics	Sub-Topics
1. Algebra & Arithmetic	<ol style="list-style-type: none">1. Linear and quadratic equations2. Systems of linear equations (2X2 or 3X3)3. Exponents, roots, and logarithms4. Inequalities and absolute values5. Functions and their properties (domain, range, composite functions)6. Arithmetic and geometric sequences and series
2. Probability & Statistics	<ol style="list-style-type: none">1. Basic probability (Independent and conditional events)2. Counting rules (addition/multiplication rules)3. Combinatorics (permutations and combinations)4. Mean, median, mode, standard deviation.5. Interpreting charts and data distributions6. Expectation and variance7. Hypothesis testing, confidence intervals
3. Linear Algebra	<ol style="list-style-type: none">1. Vectors and matrices (basic operations)2. Dot product and linear combinations3. Solving small linear systems using matrices4. Determinants (2X2 or 3X3 only)5. Matrix inversion (2X2)6. Eigen values and rank
4. Calculus	<ol style="list-style-type: none">1. Derivatives and maxima/minima2. Partial derivatives3. Integrals and applications (area, volume, probability)