數學碩士班招生考試筆試考試範圍

微積分考試範圍

參考書：

1. Calculus: One and Several Variables (Salas, Etgen, Hille)
2. Calculus (J. Stewart)

主要範圍:

Limits (L'Hopital's rule), Continuity, Differentiability, Riemann integrals, Techniques of integration, Infinite series(Taylor series), Parametric and Polar curves, Cylindrical and Spherical coordinates, Jacobian, Directional derivatives, Extremum problems, Method of Lagrange multiplier, Multiple integrals, Topics in vector calculus(Green's theorem, the Divergence theorem, Stokes' theorem.)

線性代數考試範圍

參考書：*Linear Algebra* by Friedberg, Insel, and Spence

主要範圍:

Vector spaces, Linear independence, Bases, Dimension, Linear transformations, Null spaces and Ranges, Matrix representation of linear transformations, Change of Coordinate Matrix, Rank of a matrix, Solving systems of linear equations, Determinants, Eigenvalues and eigenvectors, Diagonalization, Inner products, Gram—Schmidt orthogonalization process, Jordan canonical form.