

## Topics for Mid-Term Examination

Matrix:

- (1) Multiplication of matrices; Powers of Square Matrices; Polynomials of Square Matrices.
- (2) Elementary Row and Column Transformations; Echelon Forms and Reduced Echelon Forms; Ranks of Matrices.
- (3) Calculation of Inverse Matrices.

Linear Equations:

- (1) Solutions of Systems of Linear Equations.
- (2) Basic Solutions of Homogeneous Systems.

Vector Spaces:

- (1) Linear Combinations; Linear Independence; Linear Dependence.
- (2) Rank of Vectors; Dimensions.