

MATHEMATICS 1210 A3
WINTER SEMESTER 1996-97

TITLE: LINEAR ALGEBRA II

SCHEDULE: Class: Tues Thurs 11:00 am - 12:20 pm J203
Seminar: Wednesday 2:00 pm - 2:50 pm J202

INSTRUCTOR: Dr. Subhash Karnik
Office: J206
Extension: 2093

TEXT: Elementary Linear Algebra With Applications by
W. Keith Nicholson (3rd edition)

MARKING:

Final	35%
Mid-term Examination	25%
Quizzes	25%
Review Quizzes	15%

SCHEDULE OF EXAMINATIONS :

Mid-term test : Thursday, February 19, 1997 (Tentative)

Final Examination : As will be scheduled by Registrar's
Office in April 1997

Quizzes, Mid-term Examination and Final Examination must
be written at scheduled times.

Course Description :

Vector Spaces : Euclidean n -space, General Vector Spaces, Subspaces, Linear Dependence and Independence, Basis and Dimension, Row Space, Column Space, Nullspace, Rank and Nullity

Inner Product Spaces : Inner Products, Angle and Orthogonality in Inner Product Spaces, Orthonormal Bases, Gram-Schmidt Process, Change of Basis, Orthogonal Matrices.

Eigenvalues and eigenvectors : Eigenvalues and eigenvectors, Diagonalization, Orthogonal diagonalization, Symmetric Matrices.

Linear Transformations : Linear Transformations, Kernel and Range, Inverse Linear Transformations, Matrices of Linear Transformations, Similarity

Applications such as Geometry of Linear Transformations from \mathbb{R}^2 to \mathbb{R}^2 , Least Squares Fitting to Data, Quadratic Forms, Diagonalizing Quadratic Forms, Conic Sections, Approximating Eigenvalues by the Power Method.