

Math 477 – Numerical Linear Algebra

Course Description This course covers numerical methods for solving linear systems, eigenvalue problems, and least squares problems. Topics include direct methods (Gaussian elimination), iterative methods (Jacobi, Gauss-Seidel, conjugate gradient), QR factorization, singular value decomposition, and principal component analysis. Applications in science and engineering will be discussed.

- b. Cholesky factorization
- 6. Eigenvalues 8
 - a. Overview of eigenvalue algorithms
 - b. Reduction to Hessenberg or tridiagonal form
 - c. Rayleigh quotient, inverse iteration
 - d.