

These are subject headings for the review on Friday December 3, 2010: they are not complete, but they are a guide to what we have covered in the course. They are not guaranteed to be incorrect.

- Solving systems of linear equations
- Row Reduction Reviewed
- The Matrix Equation $A\underline{x} = \underline{b}$
- Solution sets of linear equations
- Applications
- Linear Dependence and Independence
- Linear Transformations
- The Matrix of a Linear Transformation
- Matrix Operations
- The Inverse of a Matrix
- Characterization of Invertible Matrices
- Partitioned Matrices
- Matrix Factorizations
- Subspaces of \mathbb{R}^n
- Basis
- Determinants
- Vector Spaces and Subspaces
- Null Spaces, Column Spaces and Linear Transformations
- Linear Independence in Vector Spaces; Bases
- Coordinate Systems
- The Dimension of a Vector Space
- Rank
- Change of Basis
- Eigenvectors and Eigenvalues
- The Characteristic Equation
- Diagonalization
- Inner Product, Length and Orthogonality
- Orthogonal Sets
- Orthogonal Projections
- Gram-Schmidt Orthonormalization
- Least Squares Problems