List of sections for the final exam

MATH 221 May-June 2017

§1.1 Systems of linear equations
§1.2 Row reduction and echelon forms
§1.3 Vector equations
§1.4 The matrix equation $Ax = b$
§1.5 Solution sets of linear equations

§1.6 Applications of linear systems  (skip entire section)

§1.7 Linear independence
§1.8 Introduction to linear transformations
§1.9 The matrix of a linear transformation

§2.1 Matrix operations
§2.2 The inverse of a matrix  (skip elementary matrices)

§2.3 Characterizations of invertible matrices
§2.5 Subspaces of $\mathbb{R}^n$
§2.6 Dimension and rank

§3.1 Introduction to determinants
§3.2 Properties of determinants

§4.1 Eigenvectors and eigenvalues
§4.2 The characteristic equation
§4.3 Diagonalization
§4.4 Eigenvectors and linear transformations  (only those from $\mathbb{R}^n$ to $\mathbb{R}^n$)
§4.5 Complex eigenvalues
§4.6 Discrete dynamical systems  (skip entire section)

§5.1 Inner product, length, and orthogonality  (skip Theorem 3)
§5.2 Orthogonal sets

§5.3 Orthogonal projections  (skip Theorem 10)

§5.5 Least-squares problems— (skip Examples 4 and 5 which use QR factorization from §5.4)  (skip entire section)