MAT 326 LINEAR ALGEBRA
EXAM 3 STUDY GUIDE

(1) Chapter 7, Section 1: Positive definite matrix, the trace of a matrix, orthogonal functions, the norm of a function, Fourier coefficients.
(2) Chapter 7, Section 2: Using the Gram-Schmidt orthonormalization
   (a) find orthonormal basis for a vector space generated by a given set of vectors;
   (b) find an orthonormal basis for the space of solutions of a linear system;
   (c) find an orthonormal basis for a function space generated by a given set of functions.
(3) Chapter 8, Section 1 and 2: Computing determinants
(4) Chapter 8, Section 3: Finding the rank of a matrix using determinants.
(5) Chapter 8, Section 4: Solving a linear system using the Cramer's Rule.
(6) Chapter 8, Section 5: Finding the inverse matrix of a matrix using determinants.
(7) Chapter 9, Section 1 & 2: Finding eigenvalues and a basis (eigenvectors) for the eigenspace of a given matrix.
(8) Chapter 9, Sections 3 & 4: Finding the diagonalization of a matrix.