SYLLABUS FOR MATH 574   --- FALL 2007

CLASS: MATH 574
CLASS NO: 39762

Room: KAP 138

Time: MW 8:30-9:45

Instructor: Robert Guralnick
Office: DRB 232

Phone: 740-3787   Fax: 740-2424
Email: guralnic@usc.edu

Office Hours (subject to change): MW 10-11, M 12-1

Web Site: http://www-rcf.usc.edu/~guralnic
Required Text   Horn & Johnson, Matrix Analysis

Course Goals: To introduce the main concepts and ideas of matrix
theory and linear algebra and to indicate how matrices can be used in
other aspects of mathematics.

Course Description: Some of the topics to be included are:
Equivalence of matrices with applications to determinants,
linear system theory,Similarity of matrices and canonical forms with
applications to matrix equations; Functions of matrices with
applications to differential equations; Special classes of matrices
and representation theorems for real and complex matrices; Quadratic
and hermitian forms with applications to roots of polynomials and
stability; Non-negative matrices including Perron-Frobenius theory
with applications to stochastic processes and oscillation theory;
Other topics as time permits.

Grading: There will be approximately 4 homework assignments to
be turned in (there will be other homework assigned as well); In
addition, there will be one or two midterms but no final.

First day of Class: Monday, August 27th.
Last day of Class: Friday, December 7th
Holidays Labor Day Monday, September 3rd