

Math 574 Applied Matrix Analysis

Fall Semester 2016

Instructor:

Professor I. G. Rosen

Office: KAP 244C

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Office Hours: M, W 1:00 – 2:00 or by appointment

Lecture	Class No.	Time	Location
Lecture:	39762R	MW 2:00-3:15	KAP 159

Text:

Horn and Johnson, Matrix Analysis, Second Edition.

T.A:

Bahar Acu

Email: bacu@usc.edu

Office: KAP 411

Phone: 213 – 821 – 1457

Office Hours: TBA in Math Center

Assignments:

There will be approximately seven problem assignments, one every two weeks or so.

Exams:

There are no exams.

Grading:

Course grades will be based on the seven problem assignments.

Topics covered:

Matrix fundamentals, specialized matrices, structural observations, change of basis, review of eigenvalues/eigenvectors, localization, diagonalization, matrix norms, unitary similarity and equivalence, QR factorization, unitary triangularization, Schur's Theorem, normal matrices, Jordan canonical form, polar and singular value decomposition, positive definite and positive semi definite matrices, principal component analysis, functions of matrices, circulant matrices, generalized inverse, matrix iterations, linear control theory, Kalman filter, Markov chains.