Information for Final Exam

1- The test will be held on Friday, 06/13 from 8:00 -10:59 am. Please go to the following room by 8:00 am on Friday:

If your last name starts with letter A-Q: SOLIS 107

If your last name starts with letter R-Z: SOLIS 104

2- You must bring a Blue Book to the exam (you might want to bring two). Blue books can be purchased at a variety of locations around campus, including the bookstore.

3- Please bring your UCSD student ID to the exam and expect it will be checked.

4- You may bring one 8.5”*11” sheet of handwritten notes (written on both sides) to the exam.

5- No calculators (or other electronic devices)!!

6- You must know your discussion section ID:

Sebastian Ahmed-Garay

- A01, Tu 2:00p - 2:50p, CENTR 217A
- A02, Tu 3:00p - 3:50p, CENTR 217A

Samuel Lind

- A03, Tu 7:00p - 7:50p, APM 2301
- A04, Tu 8:00p - 8:50p, APM 2301

Daniel Smith

- A05, Tu 6:00p - 6:50p, WLH 2208
- A06, Tu 7:00p - 7:50p, WLH 2208
- A07, Tu 12:00p - 12:50p, WLH 2206
- A08, Tu 1:00p - 1:50p, WLH 2206
If you attend a different section from the one in which you are enrolled, specify which is which on your blue book. For example you may write “I am enrolled in A03 but I attend A07”.

Topics

The final exam is cumulative and covers all topics discussed in class. For a list of all the course topics see the Course Calendar. In particular, make sure you are familiar with the following topics:

1- Everything on the List of Topics for midterm 1.

2- Everything on the List of Topics for midterm 2.

3- Given a square matrix A, know how to calculate the eigenvalues of A and how to find a basis for each eigenspace.

4- Know how to diagonalize a matrix.

5- The definition and properties of the norm, the inner product and orthogonality.

6- The Pythagorean Theorem (page334): know the theorem and its proof.

7- Definition and properties of the orthogonal complement of a subspace. Given a subspace W, know how to find a basis for its orthogonal complement.

8- Orthogonality relations between the subspaces: Row A, Nul A, Col A, Nul Aᵀ.

9- Definition and properties of orthogonal and orthonormal sets and bases.

10- Properties of matrices with orthonormal columns (page343).

11- Orthogonal projection onto a subspace: know the Orthogonal Decomposition Theorem and its proof (page348).

12- The Best Approximation Theorem (page350): know the theorem and its proof.

13- Know how to compute the distance from a point to a subspace.

14- Know how to perform the Gram-Schmidt process of orthogonalization.
The final exam covers both theory and computation.

Every effort is made to make the exam questions clear, correct, and straightforward. However, minor errors are sometimes detected during the exam. Should this occur, the appropriate correction will be written on the board.