

EE 602 Analytical Methods (Spring 2012)

Text Book:

Gilbert Strang, *Introduction to Linear Algebra*, Fourth Edition, Wellesley-Cambridge Press (2009) ISBN 978-0-9802327-1-4.

Textbook web site: <http://web.mit.edu/18.06/www>

Reference Book:

P. Lancaster and M. Tismenetsky, *The Theory of Matrices*, Second Edition, Academic Press, 1985.

Instructor:

Yi Guo, Associate Professor of ECE

Office: Burchard 202

Email: yguo1@stevens.edu

Ph: (201) 216 5658

Web Site: <http://personal.stevens.edu/~yguo1>

Office Hours: Tuesday Wednesday 3pm-4pm, and by appointment

Grading Policy:

Homework 10%

In-Class Quizzes 20%

Mid-term Exam 30%

Final Exam (comprehensive) 40%

Homework will be assigned regularly. The instructor may select a few homework to collect. It is the students' responsibility to keep track of homework assignment and due date. Late homework will not be accepted.

All quizzes and tests are closed-book, closed-notes, with one page of formulae sheet (A4 sized, double-sided) allowed. Calculators are allowed. No cell phones, iPad or other electronic devices. No pencils allowed on the exam paper. Use pens only in all tests.

Possible revision of homework and test grades may be discussed immediately following the return of the homework/test-papers or the announcement of grades (no later than a week from it). No make-up tests.

Any act of academic dishonesty will result in a failing grade. The students are encouraged to visit the Stevens Honor System website at <http://www.stevens.edu/honor>

Schedule of Topics (tentative):

Week	Date	Topic	Reading Assignment
1	18-Jan	Matrix operations, special properties, Laplace's Theorem, Binet-Cauchy formula	Textbook Chapter 1, Section 2.4, Chapter 5.
2	25-Jan	Elementary operation, LU decomposition	Textbook Sections 2.2, 2.3, 2.5, 2.6, 2.7.
3	1-Feb	Vector spaces and linear independence, linear systems theory. Quiz #1	Textbook Sections 3.1, 3.3, 3.5, 3.6.
4	8-Feb	Linear algebraic equations, consistency test, solution techniques	Textbook Sections 2.1, 3.2, 3.4.
5	15-Feb	Eigenvalues and eigenvectors, diagonalization of square matrices. Quiz #2	Textbook Sections 6.1, 6.2, 6.4, 6.6.
6	22-Feb	Linear differential equations, state space representation.	Textbook Section 6.3
7	29-Feb	Review for midterm exam, Q&A	
8	7-Mar	Midterm exam	
9	14-Mar	Spring break, no class	
10	21-Mar	Solutions to state space equations	Textbook Section 6.3
11	28-Mar	The matrix exponential, functions of matrix. Quiz #3	Textbook Section 6.3
12	4-Apr	Quadratic forms, positive definite matrix	Textbook Section 6.5
13	11-Apr	Controllability and observability. Quiz #4	Additional reading
14	18-Apr	Review for final exam, Q&A	
15	25-Apr	Final exam	
16	2-May	No class, Friday Class Schedule	