Applied Math 247
Linear Algebra I & II

Summer 2016
Tuesdays and Fridays
5:10 pm – 7:00 pm

Instructor

Instructor:	Darren Atkinson
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Textbook

Bretscher, *Linear Algebra with Applications*, 5th edition, Prentice Hall, 2013.

Grading

Exams: 33% each

Schedule

Week	Dates	Tuesday	Friday
1	6/21, 6/24	Chapter 1	Chapter 2
2	6/28, 7/1	Chapter 2	Chapter 3
3	7/5, 7/8	Chapter 3	Chapter 3
4	7/12, 7/15	Exam (Chapters 1–3)	Chapter 4
5	7/19, 7/22	Chapter 4	Chapter 4
6	7/26, 7/29	Chapter 5	Chapter 5
7	8/2, 8/5	Chapter 5	Exam (Chapters 4–5)
8	8/9, 8/12	Chapter 6	Chapter 7
9	8/16, 8/19	Chapter 7	Chapter 7
10	8/23, 8/26	Chapter 8	Chapter 8
11	8/30	Exam (Chapters 6–8)	

A missed exam will result in a zero. No make-up exams will be given. No notes, books, calculators, or other aids may be used on the exams. The exam questions will be modeled after the problems and exercises in the text. Homework will be assigned but will be ungraded. The best way to learn the material and prepare for the exams is to do the homework.

Expected Learning Outcomes

1. Students express systems of linear equations in matrix form and solve them using Gaussian elimination.
2. Students express a linear transformation in matrix form, calculate the inverse of a transformation, and find the composition of two transformations.
3. Students find the kernel and image of a linear transformation, find bases for those subspaces, test for linear independence, apply the rank-nullity theorem, and find a basis with respect to coordinates.
4. Students prove statements about linear spaces and demonstrate familiarity with various examples of linear spaces, including spaces of vectors of real numbers, matrices, and polynomials.
5. Students use orthogonal transformations, apply the Gram-Schmidt process to find an orthonormal basis, and use least-squares approximation to fit data.
6. Students calculate the determinant of a matrix, in particular for the purpose of finding eigenvalues of a matrix.
7. Students calculate the eigenvalues and eigenvectors of a matrix and use them to solve discrete dynamical systems.
8. Students apply the spectral theorem to topics such as quadratic forms and the singular value decomposition.
9. Students apply linear algebra in some context appropriate to engineering.

Policies

Disability Accommodation Policy

To request academic accommodations for a disability, students must contact Disabilities Resources located on the second floor of Benson. Phone numbers are (408) 554-4111; TTY (408) 554-5445. Students must register and provide documentation of a disability to Disabilities Resources prior to receiving academic accommodations.

Academic Integrity Policy

The University is committed to academic excellence and integrity. Students are expected to do their own work and to cite any sources they use. A student who is guilty of a dishonest act in an examination, paper, or other work required for a course, or who assists others in such an act, may, at the discretion of the instructor, receive a grade of F for the course.

In addition, a student found guilty of a dishonest act may be subject to sanctions up to and including dismissal from the University as a result of the student judicial process as described in the *Community Handbook*.

A student who violates copyright laws, including those covering the copying of software programs, or who knowingly alters official academic records from this or any other institution is subject to similar disciplinary action.