Course Outline for 124 Linear Algebra
University of Vermont, Fall 2006

Lecture room and meeting times:
254 Votey, Tuesday and Thursday, 12:30 pm to 1:45 pm

Instructor: Peter Dodds
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Office hours: Tuesdays 2:00 pm to 3:00 pm, Wednesday 11:00 am to 12:00 pm
Course website: `http://www.uvm.edu/~pdodds/teaching/2006-08UVM-124/`
Textbook: "Introduction to Linear Algebra" (5th edition) by Johnson, Riess and Arnold.

Grading breakdown:

1. **Tests (35%)**—Three 75 minutes tests distributed throughout the course, all of equal weighting.

2. **Assignments (40%)**—All assignments will be of equal weight and will be 1 week take home affairs. The two lowest scores will be dropped and the average of the remainder taken. Expect about nine of these pleasurable experiences. Clarity in writing and presentation will be taken into account in grading.

3. **Final exam (25%)**—Three hours of fun with linear algebra on December 15th, 2006, 8 am to 11 am, in 254 Votey.

4. **Homework (0%)**—Problems will be assigned from the textbook at the end of most lectures. These will be problems from the textbook for which answers are provided. Doing these exercises will be most beneficial and will increase happiness. Problems presenting difficulty will be discussed in the following class as time permits, or in office hours.

5. **General attendance (0%)**—it is highly desirable that students attend class, and class presence will be taken into account if a grade is borderline.

6. **Attendance of office hours (0%)**—students are requested to attend at least one session of office hours during the course (again, the borderline grade issue is to be kept in mind here).

Schedule: The course will mainly cover chapters 1 through 6 of the textbook. Some topics may be omitted, others added.

Week number (dates)	Tuesday	Thursday
1 (8/29 and 8/31)	Lecture	Lecture
2 (9/5 and 9/7)	Lecture	Lecture ➤ Assignment 1
3 (9/12 and 9/14)	Lecture	Lecture ➤ Assignment 2
4 (9/19 and 9/21)	Lecture	Lecture ➤ Assignment 3
5 (9/26 and 9/28)	*Review*	*Test 1*
6 (10/3 and 10/5)	Lecture	Lecture ➤ Assignment 4
7 (10/10 and 10/12)	Lecture	Lecture ➤ Assignment 5
8 (10/17 and 10/19)	Lecture	Lecture ➤ Assignment 6
9 (10/24 and 10/26)	*Review*	*Test 2*
10 (10/31 and 11/2)	Lecture	Lecture ➤ Assignment 7
11 (11/7 and 11/9)	Lecture	Lecture ➤ Assignment 8
12 (11/14 and 11/16)	Lecture	Lecture ➤ Assignment 9
13 (11/21 and 11/23)	*No class*	*No class*
14 (11/28 and 11/30)	*Review*	*Test 3*
15 (12/5 and 12/7)	Lecture	Review

Topics to be covered (potentially): systems of linear equations, geometric interpretation thereof, vector spaces, Gauss-Jordan elimination, representations of graphs and networks, matrix operations, null space, column space, row space, inverses, determinants, Cramer's Rule, cofactors, singularity, eigenvalues and eigenvectors, diagonalization, linear transformations, inner (dot) products, cross products, change of basis, Gram-Schmidt process, LU factorization, QR factorization, least-squares approximations, projections, and the joys of singular value decomposition.

Important dates:

1. Add/Drop, Audit, Pass/No Pass deadline—Monday, September 11.

2. Last day to withdraw—Friday, October 27.

3. Reading and exam period—Friday, December 8th to Friday, December 15th.

Do check your zoo account for updates regarding the course.

Academic assistance: Anyone who requires assistance in any way (as per the AC-CESS program or due to athletic endeavors), please see or contact me as soon as possible.

Being good people: First, in class there will be no electronic gadgetry, no cell phones, no beeping, no text messaging, etc. You really just need your brain, some paper, and a writing implement here (okay, and Matlab—see below). Those who beep in an annoying fashion will be fined one Clif Builder Bar by the lecturer. Second, I encourage you to email me questions, ideas, comments, etc., about the class but request that you please do so in a respectful fashion. Finally, as in all UVM classes, **Academic honesty** will be expected and departures will be dealt with appropriately. See `http://www.uvm.edu/cses/` for guidelines.

Late policy: Unless in the case of an emergency (a real one) or if an absence has been predeclared and a make-up version sorted out, assignments that are not turned in on time or tests that are not attended will be given 0%.

Computing: Students are encouraged to use Matlab to check their work. (Matlab is short for Matrix Laboratory and is the natural choice for linear algebra). I will talk about Matlab in class. Note that for any assignment problem, written details of calculations will be required.

Grades:

A+	97–100	B+	87–89	C+	77–79	D+	67–69
A	93–96	B	83–86	C	73–76	D	63–66
A-	90–92	B-	80–82	C-	70–72	D-	60–62