Welcome to Linear Algebra! (Math 221, Spring 2005)

Textbook:

Linear Algebra and Its Applications by David Lay, Addison-Wesley, 3rd ed.
Text Website: www.laylinalgebra.com

Instructor:

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Meeting: T Th 10:00 - 11:15 am
Office Hours: M W F 1030-1130 am or by appointment

What is linear algebra? Simply put, the object of linear algebra is about matrices and systems of linear equations. Topics include systems of linear equations, matrices, determinants, eigenvalues, linear transformations and vector spaces.

Course Objectives: Upon completion of this course, the student should be able to

1. Demonstrate a knowledge and understanding of the concepts, terminology and techniques of introductory linear algebra.
2. Perform computations involving linear systems, matrices, vector spaces and linear transformations.
3. Write clear solutions to mathematical problems, and mathematically rigorous definitions and proofs of basic linear algebra results.
4. Use these concepts and techniques in applied problem solving and mathematical modelling.

Tentative Topics

Chapter 1.1 - 1.5, 1.7 - 1.9
Chapter 2.1-3, 2.7
Chapter 3.1 - 3.3
Chapter 4.1 - 4.6
Chapter 5.1 - 5.3
Chapter 6.1 - 6.3
If time permits, we like to cover 2.4 and 5.4 and some applications from this book or instructor's choice.

Class Attendance is mandatory. If you must miss class due to illness or other valid excuse (e.g. athletic event) please send me email with explanation. An inordinate number of absences will handled in accordance with the College's policy.

Being late for classes is quite annoying. Being late twice carries a penalty of one percent of overall points.

Grading Criteria

- HOMEWORK: Homework is due at 4PM every Thursday covering previous week's work (It won't be collected on some Thursdays.) Unless specified otherwise, It should be completed individually. You may ask questions about the homework on any day *except the day that it is due.* I will not grading all of the homework problems. I will choose several at random from the assigned list. Solutions to your homework should:

  - be neatly written out.
  - include a statement of the problem.
  - be written in completed sentences.

  Sloppy written homework will be assigned a 15% grade without further consideration.
- Late assignments will not be accepted without permission. If permission is given, the following penalties will be assigned:
  - 1 day late: 10% reduction
  - 2 days late: 20% reduction
  - 3 days late: 30% reduction
  - Not accepted after 3 days late.
- GROUP WORK. Group projects are complete a group of 2-3 students. Some (or similar) problems will be on the test. It is the responsibility of each member to full understand the solution handed in. It is also a wonderful opportunity to learn from one another.
- Exams can not be made up without prior arrangement with the instructor with the exception of Emergency. The exams are on the Thursdays of the following dates:

  February 17, March 24, April 21.
- **Evaluation:**
  Assignments 25%; Projects 12%; Exams 36%; Final 24%; Attendance and participation: 3%

92 - 100% A	90 - 91% A-	
88 - 89% B+	82 - 87% B	80 - 81% B-
78 - 79% C+	73 - 77% C	70 - 67% C-
58 - 66 % D	57 % and below: F	

Honor Code
THE HONOR CODE OF OXFORD COLLEGE APPLIES TO ALL WORK SUBMITTED FOR CREDIT IN THIS COURSE. BY YOU SIGNATURE ON SUCH WORK YOU PLEDGE THAT WORK WAS DONE IN ACCORDANCE WITH RULES STIPULATED ON THE WORK OR IN THIS SYLLABUS.

Technology: You are allowed to use calculators or computers on your homework, where appropriate. Calculators or computers will not be allowed on Exams, however. This is (1) to ensure the points are not based on what kind of calculator/computer you own, and (2) because one goal of the course is that you understand basic computation in linear algebra.
If you plan to use computer, I suggest you using the Matlab (short for Matrix Laboratory) software. This software is available on Dooley, the Unix machine.

Workload: You should expect to spend at least 6 hours outside of class.

Assistance: I encourage you to come see me. If you cannot make it during my office hours, either email me if you have short questions, or let me know when you would like to meet.

Language and linear algebra.
In practical sense, linear algebra is a language. You must learn this language the same way you learn a foreign language -- with daily work. Linear algebra has a universality which transcends the disciplines which apply it. Another reason is that linear algebra begins to deal with much more abstract notions than you may be used to from calculus.