Syllabus for Linear ALgebra

Prof. Jonathan King

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Textbook. *Linear Algebra and its applications*, 2th ed., by David C. Lay.

Overview. Welcome. Linear algebra is a beautiful subject, and has some of my favorite material in the undergraduate curriculum.

Be aware that our syllabus is reasonably large –we'll need to keep up a good pace. Let us make this a joint responsibility; if you suspect that I am moving too slowly or am making too may "interesting asides", please tell me (politely).

We'll cover chapters 1–5, parts of 6 and parts of 7, as well as some material which is not in the text. I will expand on what the text covers and of course you will be responsible for this additional material.

Notebook. Please obtain a 3-ring binder in which to place all hand-outs, your exams, solution sheets, and other materials. Always bring the notebook to class. For the first month of the course, at least, please bring the textbook to class.

Grading. Here is an overview. I'll hand out exam dates and other details in a few weeks.

There will be **no** final exam. We will have three exams, as well as several projects, some of which will involve the matrix-algebra program *Matlab*.

Some Requirements. Within a few weeks, I will arrange for a computer account on the Math dept. system for each student. You will need to learn *how to read* and *how to send* email on your own. (You can set up email forwarding to another e-address if you wish. But since you will (ought) to be in the lab frequently, it perhaps is best if you read email there.) Manuals on using email are in the Math Dept Lab (MDLab), as well as at CIRCA.

I expect you to read your email one per day, Monday through Friday. Homework and special assignments will be primarily distributed by email.

There will be weekly homework assignments. Sometimes I will grade these in the conventional sense, but more often I will have you (individually or in teams) present solutions/attempts at the blackboard based on your HW, and the rest of the class and I will critique them. You may do HW in pairs (and I recommend this, changing pairs every so often). Each person whose name is on the paper, is responsible to understand the solutions therein. Keep a HW looseleaf notebook, which I may look at it during the inclass examinations.

Your class participation is crucial. I will ask each student to present solutions to homework problems on the blackboard. This, together with homework as well as your comments/questions in class and during office hours, will comprise the "participation" component of the grade you earn.

General comments. Make arrangements with at least three classmates so that –in the unfortunate (*and extremely unlikely*) event that you miss a class– you are able to get complete notes, changes in exams dates, and so on. This is especially important since we will cover material which is not explicitly in the text.You should check my web page,

`http://www.math.ufl.edu/∼squash/`

once a week to see what information I have posted concerning the class.

Useful Books.

Linear Algebra: A concrete introduction, by Schneider, Steeg and Young.

Elementary Linear Algebra, by H. Anton.

Elementary Linear Algebra, by C.H. Edwards, Jr., and D.E. Penney.

Elementary Linear Algebra, by Andrilli and Hecker.

Books to inspire a delight in Mathematics.

Mathematical Plums, Ross Honsberger. QA7.M34447

Mathematical Gems (I, II, III) Ross Honsberger. QA 241 .H63

Mathematical Circles Revisited and *Mathematical Circles Squared*, both by Howard Eves.

Conclusion. Please remember that you are encouraged to work on homework problems together. I may assign some communal homework projects. Linear Algebra, when taught well, is a fascinating subject. When reading science articles in the newspaper or textbooks in scientific subjects, keep your eyes open for examples where linear algebra was used in a significant way to solve a real-world problem. Then bring this example to class —and teach me something! *J. King*

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