Linear Systems

Math 214 Spring 2008 — Fowler 307 MWF 9:30 am - 10:25 am

 — http://faculty.oxy.edu/ron/math/214/08/

INSTRUCTOR Ron Buckmire ∼ Fowler 313 ∼ x2536 ∼ `ron@oxy.edu` ∼ **MadProfessah**

WEBSITE The official syllabus for this course is at `http://faculty.oxy.edu/ron/math/214/08/`

OFFICE HOURS I am in my office (Fowler 313) most weekdays until at least 5pm. My official office hours for Spring 2008 are **MTWF 10:30-11:30am** and **R 3-4pm**.

I am readily accessible by e-mail at **ron@oxy.edu** and by phone at **323-259-2536** and AIM at **ProfBuckmire** or **MadProfessah** (add me to your buddylist!) If you need to see me at a time not specified here, then contact me and make an appointment and I'll be happy to meet with you then. If you don't interact with your professor(s) on a 1-to-1 basis then you really aren't getting your (tuition) money's worth!

CLASSROOM We will meet in Fowler 309, MWF from 9:30pm-10:25am.

TEXTBOOK *Linear Algebra: A Modern Introduction* (Second Edition) by David Poole (Brooks/Cole, 2006).

GOALS OF THE CLASS As always, a central goal of any class I teach is to develop and encourage the communication of mathematical ideas. Specifically, in this class I want you to

- Clearly articulate concepts in linear algebra in both oral and written forms.
- Perform routine calculations related to fundamental concepts in linear algebra.
- Develop a deep and flexible understanding of fundamental concepts in linear algebra.
- Develop an appreciation of selected applications of concepts in linear algebra

(Notice anything in common among these goals?) **Concepts!**

TOPIC OF THE CLASS The central topic of the class is for you to understand and manipulate matrices. In particular, learning how to find the complete solution to **linear systems** of equations $A\vec{x} = \vec{b}$, where A is a known coefficient matrix, x is a vector of unknowns and b is a known vector.

The material in the class will include most of the topics from the first five chapters of the text, with the possible addition of material from Chapters 6 and 7.

FORMAT OF THE CLASS We will be making infrequent use of the MATLAB computer algebra system. I expect a lot of participation in class and will facilitate this through the use of daily class formats (worksheets), electronic response devices (clickers!), group work, in-class computer exercises, abbreviated lectures and online communication.

PROJECT There will be a group project which will require a 10-minute oral presentation on some topic in Linear Algebra. More information about the Group Project will be distributed later in the semester. The group project is done in a small group of 2 or at most 3 persons (averaging 5 minutes per person). There may be a written component also.

HOMEWORK Homework should be done in **pencil**. Homework questions will be assigned daily. The assignment will be on the website and on the web, when in doubt go by the website. Homework will be due at **the beginning** of the next class.

You are **strongly** encouraged to work on homework together. Whatever you hand in **must represent your own understanding of the material**. Copying homework is cheating and will be dealt with accordingly.

QUIZZES There will be quizzes given every week. These quizzes will almost always be take-home quizzes given out on class on one day to be handed in in class in the next class. They will consist of interesting former exam problems which you work on by yourself and will be a way in which you can assure yourself you are keeping up understanding the course material. The quiz, bonus quizzes (when available) and hints to the quiz will be posted on the web.

TESTS There will be **two (2)** in-class mid-term exams in this course. The mid-terms are currently scheduled for **Friday February 29** (Leap day!) and **Friday April 18**. These dates are subject to change until 1 week before the scheduled date. You may not be excused from a test without notifying me at least 1 week before the scheduled test date.

FINAL EXAM The final exam is scheduled **Tuesday May 6th 1-4pm**.

GRADING Your course grade will be composed of the following:

- Homework and Participation **20%**
- Two (2) Tests **20 % (10 % each)**
- Quizzes **20 %**
- Final Exam **20 %**
- Group Project **20 %**

To receive full credit on a problem, your solution or explanation must be easy to read. Be tidy. Dont skip steps. Emulate the way I present examples in lecture. Write as if you were explaining the solution to a fellow student who is trying to learn the material.

POLICIES This a (non-exhaustive) list of course policies

- Make-up tests will not be given except for compelling reasons which have been communicated to me in writing well in advance (i.e. at least 7 days) of the test date.
- If you are late to a test, you will only be allowed the time remaining in which to complete your test.
- Late homework will not be accepted under any condition since the solutions are made available on the same day that they are collected in class.
- Bonus points may be capped at some point.

ACADEMIC HONESTY I expect the highest level of academic honesty from my students. If you have any questions about academic honesty you should read the sections on "Spirit of Honor" (front cover) and "Academic Policies" (pp 111-112) found in the Student Handbook. Any instances of plagiarism or cheating will be dealt with strictly and in accordance with procedures outlined in the Handbook.

OTHER NOTES We will not have class on Monday February 18 (President's Day), March 10-14 (Fall Break) or March 17th. I will let you know at least a week ahead of time if there may be other days that we will not have class. In addition, you should know that **we will have our last class on Wednesday April 29**.