Linear Systems

Math 214 Spring 2006
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Fowler 307 MWF 2:30pm - 3:25pm
http://faculty.oxy.edu/ron/math/214/06/

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/214/06/`

OFFICE HOURS I am almost always in my office (Fowler 313) until at least 5pm. My official office hours for Spring 2006 are **MWF 3:30-5:00pm** and **T 10:30am-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 me on a 1-to-1 basis then you really aren't getting your (tuition) money's worth!

CLASSROOM We will meet in Fowler 307, MWF from 2:30pm-3:25pm.

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

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. This is the first time I have used this text but it comes strongly recommended by other faculty.

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), group work, in-class computer exercises, abbreviated lectures and online communication.

PROJECT There will be a group term project which will require a 10-minute oral presentation on some topic in Linear Algebra. More information about the Term Project will be distributed later in the semester.

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 homeork 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 with the course. The quiz, bonus quizzes (when available) and hints to the quiz will be posted on the web.

TESTS There will be **two (2)** exams in this course. The mid-terms are currently scheduled for **Friday March 3** and **Friday April 21** . 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 for **Wednesday May 10, 8:30am-11:30am**.

GRADING Your course grade will be composed of the following:
- Homework **20%**
- Two (2) Tests **20 % (10 % each)**
- Quizzes **20 %**
- Final Exam **20 %**
- Term 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 20 (President's Day), March 13-17 (Fall Break). I will be out of town on Monday March 20. 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 Thursday May 4**.