Math 314 (814) Matrix Theory

Section 005: TuTh 11:00-12:15 Mabel Lee Hall (MABL) 230

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WWW pages for this class: http://www.math.unl.edu/∼mbrittenham2/classwk/314s10/

(There you will find copies of nearly every handout from class, lists of homework problems assigned, dates and review sheets for exams, etc.)

Office Hours: (tentatively) Mo 12:00 - 1:00, Tu 1:00-1:50, and We 10:30 - 11:30, and whenever you can find me in my office and I'm not horrendously busy. You are also welcome to make an appointment for any other time; this is easiest to arrange just before or after class.

Text: *Linear Algebra: a Modern Introduction*, by David Poole (2nd edition, Brooks/Cole).

ACE outcome 3: This course satisfies ACE Outcome 3. You will apply mathematical reasoning and computations to draw conclusions, solve problems, and learn to check to see if your answer is reasonable. Your instructor will provide examples, you will discuss them in class, and you will practice with numerous homework problems. The exams will test how well youve mastered the material.

This course, as the text and course titles are meant to imply, is intended to illustrate the theory, techniques, and applications of linear algebra (i.e., solutions to linear equations) through the use of matrices (whatever they are). Our basic goal will be to work through most of each chapter of the book:

Ch. 1, Vectors
Ch. 2, Systems of Linear Equations
Ch. 3, Matrices
Ch. 4, Eigenvalues and eigenvectors
Ch. 5, Orthogonality
Ch, 6, Vector Spaces
Ch, 7, Distance and Approximation

Homework will be assigned from each section, as we finish it. It is an essential ingredient to the course - as with almost all of mathematics, we learn best by doing (again and again and ...). Cooperation with other students on these assignments is acceptable, and even encouraged. However, you should make sure you are understanding the process of finding the solution, on your own - after all, you get to bring only one brain to exams (and it can't be someone else's). For the same reason, I also recommend that you try working each problem on your own, first. A small selection of the homework problems will be collected, graded, and returned; this will constitute 15% of your final grade.

Quizzes will be given each Thursday, during weeks that do not also contain an exam (in *our* class...) or the first day of classes. Each will typically consist of one question (modelled on a homework problem) from the material covered through the previous Tuesday. Your lowest two quiz grades will be dropped before computing your final quiz average, which will constitute 20%

of your grade. A missed quiz will count as zero (and will therefore be the first grade dropped); a make-up quiz can be arranged only under the most unusual of circumstances.

Midterm exams will be given two times during the semester, **in the evening, outside of normal class time**, on dates which will be determined in consultation with the class. Each exam will count 20% toward your grade. You can take a make-up exam only if there are compelling reasons (a doctor SAYS you were sick, jury duty, etc.) for you to miss an exam. Make-up exams tend to be harder than the originals (because make-up exams are harder to write!).

Finally, there will be a regularly scheduled **final exam** on **Tuesday, May 4, from 3:30pm to 5:30pm**. It will cover the entire course, with a slight emphasis on material covered after the last midterm exam. It will count the remaining 25% toward your grade. You must arrange your personal and work schedules to allow you to take the exam at this scheduled time.

Your course grade will be calculated numerically using the above scales, and will be converted to a letter grade based partly on the overall average of the class. However, a score of 90% or better will guarantee some kind of **A**, 80% or better at least some sort of **B**, 70% or better at least a flavor of **C**, and 60% or better at least a **D**.

In mathematics, new concepts continually rely upon the mastery of old ones; it is therefore essential that you thoroughly understand each new topic before moving on. Our classes are an important opportunity for you to ask questions; to make sure that you are understanding concepts correctly. Speak up! It's your education at stake. Make every effort to resist the temptation to put off work, and to fall behind. Every topic has to be gotten through, not around. And it's a lot easier to read 50 pages in a week than it is in a day. Try to do some mathematics every single day. **Class attendance** and **doing the homework** are your best methods for insuring that you will keep up with the material, and to make sure that you understand all of the concepts.

Departmental Grading Appeals Policy: The Department of Mathematics does not tolerate discrimination or harassment on the basis of race, gender, religion, or sexual orientation. If you believe you have been subject to such discrimination or harassment, in this or any other math course, please contact the department. If, for this or any other reason, you believe your grade was assigned incorrectly or capriciously, then appeals may be made (in order) to the instructor, the department chair, the department grading appeals committee, the college grading appeals committee, and the university grading appeals committee.

Some important academic dates

Jan. 11 First day of classes.
Jan. 18 Martin Luther King Day - no classes.
Jan. 22 Last day to withdraw from a course without a **'W'**.
Mar. 5 Last day to change to or from P/NP.
Mar. 14-18 Spring break - no classes.
Apr. 9 Last day to withdraw from a course.
May 1 Last day of classes.