Math 217: Linear Algebra
MTWF 11-12pm Dennison 315

Instructor:
Thomas Lam
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East Hall 2834

Office Hours:
Tuesday 1-2:30 pm
Wednesday 1:30-3 pm
or by appointment

Webpage:
http://www.math.lsa.umich.edu/~tfylam/Math217/Math217.html

Required text:
Linear Algebra and its Applications
(3rd updated edition)
by David C. Lay

Prerequisites:
Math 215, 255, or 285.

Course topics and goals:
This course is designed to give potential math majors, and those interested in the theory behind the mathematics, a rigorous introduction to linear algebra. The topics we will cover are, roughly, systems of linear equations; matrix algebra; vectors, vector spaces, and their subspaces; geometry of $\mathbb{R}^n$; linear dependence, bases, and dimension; linear transformations; eigenvalues and eigenvectors; diagonalization; inner products.

We will not only study the above concepts and their applications, but also the methods by which one proves the foundational results in linear algebra. Consequently, this course has two major goals: to learn linear algebra and to learn how to write a rigorous mathematical proof. Students should leave this course prepared to both use linear algebra and to succeed in further theoretical courses in mathematics. This is a difficult course, and those interested only in the computational side of linear algebra should consider Math 214 or 417.

Grading: Your course work will be weighted out of 200 points, broken down as follows:

- Written homework: 45 pts
- Web homework: 10 pts
- Quizzes: 25 pts
- Midterms (2): 35 pts each
- Final exam: 50 pts

Homework:

- Homework assignments, consisting of both web exercises and written problems, will in general be assigned (on the course webpage listed above) each Wednesday. The webwork is due 11:59pm the next Tuesday, and the written work is due the next Wednesday, unless explicitly stated otherwise.
- **Written assignments are due at the beginning of class. No late homework will be accepted.** Late homework includes assignments handed in during or at the end of the class period on the due date.
- You are encouraged to work together on homework assignments, but **you must write up your solutions independently**. Your solutions should be written clearly and legibly, showing all of your work. Failure to abide by this policy will result in a zero on the assignment.

Quizzes:

Quizzes will be short, in-class assignments to test comprehension of recent material. A quiz could involve a computation or exercise, a short proof, or both. They will be unannounced and, roughly, biweekly.

Exams:

- First Midterm: **Thursday, February 10, evening**
- Second Midterm: **Thursday, March 24, evening**
- Final Exam: **TBA**
- Make-up exams will be available only to students who have a serious emergency, a strongly compelling personal reason, or grave academic conflict.
- Students with special exam-taking requirements should contact me, with appropriate documentation from the University, by Friday, January 14th.
- No calculators, note cards, books, or other outside materials are allowed on any exam or the final. Any student found with such material, or that is found giving or receiving unauthorized information, will be considered cheating, and will be prosecuted through the University to the fullest possible extent.