

**Meeting Information:** Monday, Tuesday, Wednesday, Friday, 11:10-12:00 in Math 305.

**Instructor:** Adam Nyman

**Office:** Math 107, x6941

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**Office hours:** (Tentative) Mondays 2:10-3, Tuesdays 2:10-3, Friday 12:10-1, and by appointment.

**Textbook:** *Linear Algebra with Applications*, 7th Ed., Steven J. Leon, Prentice Hall

**Course Web Page:** <http://www.math.umt.edu/Nyman/math221.mht>. All handouts and homework assignments are available only at this website.

**Prerequisites:** MATH 153.

**Overview:** The course is an introduction to linear algebra, computational techniques, and applications. The main topics studied are the theory of linear equations, matrix decompositions, properties of  $\mathbb{R}^n$ , orthogonality, vector spaces, determinants, eigenvalues, and linear transformations. Applications are given to relate the theory to practical uses, as well as to show the extensive use of linear algebra in related disciplines.

**Goals:** The learning goals, as defined by the mathematics department, are:

1. To learn the topics listed in the overview above,
2. to understand some applications of linear algebra, and
3. to begin to learn to write and read simple proofs.

**Exams:** There will be three fifty minute exams: the first is on Tuesday, February 12, the second is on Tuesday, March 11, and the third is on Tuesday, April 15. There will be a final exam on Monday, May 5 from 10:10-12:10 in Math 305.

**Homework:** The homework problems which will be assigned is only a minimal list. You should do the more straight forward problems on your own as a warmup. I recommend doing additional problems whenever possible; especially in an area that you find challenging. Mastery of mathematics comes with practice! You are encouraged to work together on the assignments, but are asked to write up the solutions individually. We expect your solutions to be clearly written, with thorough explanations. It often helps if you look over your solutions before you hand them in and ask yourself if a classmate could easily understand what you have written.

**Late Homework Policy:** You will have one opportunity to hand in late homework (no later than one class meeting after it was due). After you have used up your opportunity, no late homework will be accepted. Since there will be no exceptions, and as a courtesy to your grader, please try to use this only for emergencies.

**Readings:** In mathematics lectures, a new term is often defined at the beginning of the class period and then used repeatedly throughout the session. If one's understanding of the topic is not complete, the lecture can be a bit confusing. One way to combat this problem is to be prepared for class by reading the text ahead of time. Thus, when a new topic is introduced in class, it is *not* the first time you have seen it. The reading assignments are designed to help you make better use of class time, they are to be done *before* the material is covered in class.

**Grading:** Your grade will be based on homework, three exams, and a final exam, as follows:

- homework: 25 %
- exams: 15% each
- final exam: 30%

**Additional Comments:**

- Students with disabilities are welcome to discuss accommodations with me.
- All students need to be familiar with the Student Conduct Code. You can find it in the "A to Z Index" on the UM home page.
- All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University.