

Linear Algebra II: Math 423

Spring 2010, MWF 10:20–11:10 in the CE 222

Professor: Michael Anshelevich, 326 Milner, manshel@math.tamu.edu, 845–6679 (please use email).

Webpage: www.math.tamu.edu/~manshel/m423/m423.html.

Office hours: MTW 11:30–12:30, or by appointment.

Textbooks: Friedberg, Insel & Spence, LINEAR ALGEBRA, 4th edition, Pearson Prentice Hall, ISBN 0130084514. A supplementary text, primarily for the Honors section, is LINEAR ALGEBRA DONE WRONG by Treil (see the web page for a link).

Prerequisites: Math 222, and Math 304 or equivalent. In other words, a “proofs course” and a linear algebra course.

Course outline:

- Vector spaces: general theory and examples.
- Linear transformations, matrices, and the relationship between them.
- Determinants: a brief review.
- Eigenvalues, eigenvectors, and diagonalization.
- Inner product spaces.
- Special classes of operators.
- Jordan canonical form.

Exams: We will have two in-class tests on Fridays, **February 19** and **March 26**. The final exam is on Tuesday, **May 11**, 8:00–10:00 a.m. If, under *completely exceptional* circumstances, you need to miss one of the tests, a make-up exam will be given. Only University-approved excuses will be accepted, and you have to let me know preferably in advance, and no later than 2 days after the exam. The exams are closed book, closed notes, and calculators are not permitted. You should bring your ID to all tests.

Homework: weekly, due on Wednesdays in class. Homework problems may appear on the exams and quizzes. You are encouraged to work together, but straight copying of homework is not allowed. Late homework will not be accepted, but the lowest homework score will be dropped.

Quizzes: There will be short quizzes in class, approximately one for every two homework assignments, announced in advance. The lowest score will be dropped.

Grading: Homework 15%, quizzes 10%, each midterm test 20%, final 35%. A total score of 90% or more guarantees an A, a score of 80% or more a B, 70% or more a C, 60% or more a D.

Scholastic Dishonesty: Cheating of any form is not acceptable and it will be dealt with harshly. In particular, copying work done by others, either in-class or out of class, is an act of scholastic dishonesty and it will be prosecuted to the full extent allowed by university policy. Collaboration on assignments is permitted for this course, however each student must write up their own solutions. For more information on university policies regarding scholastic dishonesty, see the University Student Rules.

Aggie Honor Code: “An Aggie does not lie, cheat, or steal or tolerate those who do.”

Difference between sections: The 200 (honors) and 500 (regular) sections will have different tests and homework assignments. Some topics from the textbooks will be discussed in class primarily for the benefit of the honors students, and will be required material for them but optional for the rest of the class.

Other important dates: January 25 (last day to add or drop a course), March 15–19 (Spring break), April 2 (Reading day), April 6 (Q-drop), May 4 (last day of classes).

Students with disabilities: Come talk to me no later than the first week of classes. “The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe that you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities, in Room 126 of the Koldus Building or call 845–1637.”

Attendance: According to the University Student Rules, absence for three or more class days requires a University-approved excuse and documentation.

Comments: In this course you will learn new material, even though you have already seen most of the topics in Math 304. However, unlike in that course, we will put serious emphasis on proofs. An important component of this course is learning to give rigorous proofs, in particular learning what it means to prove a mathematical statement. The hope is that, by the end of the course, the need for precision will become apparent, and precision in your mathematical reasoning second nature...

Keys to success: Attend class (of course :) Solve *all* the homework problems, well before the exams. Spend more than seven hours per week working on the problems. Form study groups to discuss the course material and homework problems. Read ahead in the text.

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