

MA 405: Introduction to Linear Algebra and Matrices, Fall 2008

Lectures: (T-Th) 3:00-4:15 HA 325 Office Hours : HA 234, T & H 2-3

Instructor: Dr. N. Jing, 3-3584.

E-mail: jing at math dot ncsu dot edu or nathanjing at hotmail dot com

TA's office hours will be announced.

Tutoring is available free of charge at the Multimedia Center.

Textbooks

Linear Algebra with Applications, by Steven J. Leon, 7th edition, Prentice Hall, 2005, ISBN 0131857851. Also available in paperback, ISBN 0131936239

Goal and Objectives

This is a first course in linear algebra and matrices. The course will start with solving linear systems using Gauss elimination. Students will be introduced to basic concepts such as row echelon form, determinants, vector spaces, linear independence, bases, dimension, orthogonality, eigenvalues, and reduction of matrices to diagonal forms. At the end of the course students will master the basic concepts of linear algebra and matrices needed to apply elsewhere.

Tests Schedule

Four hourly in-class tests are scheduled on Tuesdays as follows:

I, H, Sept. 18 II, T, Oct. 7 III, H, Oct. 28 IV, H, Nov. 20

Cumulative *Final Exam*, Thursday, December 11, 2008, 1:00-4:00

Grading Policy

The term grade will be weighted according to the following formula:

Attendance/Quizzes (8%)+ Tests (62%)+ Final Exam (30%)

Course contents

Introduction, Linear equations, matrices, Gauss Eliminations

Cramer's rule, applications

Vector spaces, Subspaces, linear dependence, rank, coordinates and bases

Linear transformations, inner products, least Squares, Gram-Schmidt process

Eigenvalues and eigenvectors, Similarity, diagonalization

Applications-Fibonacci sequences or Differential Equations

Homework will be assigned, but not collected or graded. Selected problems will be discussed in class. A key to success in this class is to do all assigned homework problems!

Tests/Quizzes. Quizzes are mostly unannounced and will be given periodically over the semester. If you miss the final your term grade will be F as the university has special rules about the final exam. We do not give any make-up tests as your lowest test scores will be dropped, but you need to contact me immediately for any unforeseen emergencies. Since quizzes are one form of taking attendance there will be no make-up quizzes under any situation.