

# MA2073 Syllabus

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Office hours: 1:00-1:50 Mon/Tues

or by appointment ... or, just drop in

MA 2073 { C01, C Term 2004

Matrices & Linear Algebra II

Text: "Linear Algebra" by Friedberg,  
Insel and Spence (4th ed.)

Meetings: 2:00-2:50 MTRF in SH106

The goal of this course is to develop a mature understanding of real vector spaces, linear transformations and some uses of these ideas. The student is assumed to have a basic familiarity with matrices and vector spaces, with a firm ability to row-reduce matrices and apply this technique to a variety of problems. In this course, we will mainly focus on the structure of a linear transformation from a finite-dimensional vector space to itself. Topics will include eigenvalues, eigenvectors, generalized eigenvectors, diagonalization and the Jordan canonical form. Linear algebra is an essential part of mathematics and an indispensable tool in many areas of science and engineering. We will illustrate this fact by touching on some of the many applications of linear algebra throughout the course.

## TERM SCHEDULE

Here is a rough outline of what we will cover in the 28 lecture periods:

Jan. 15 to Jan. 16	Introduction	
Jan. 19 to Jan. 23	Review of Vector Spaces	Chapter 1
Jan. 26 to Jan. 30	Linear Transformations	Chapter 2
Feb. 2 to Feb. 6	Matrix Theory, Determinants	Chapter 3,4
Feb. 9 to Feb. 13	Eigenvalues & Diagonalization	Chapter 5
Feb. 16 to Feb. 20	Jordan Canonical Form	Chapter 7
Feb. 23 to Feb. 27	Inner Product Spaces	Chapter 6
Mar. 1 to Mar. 4	Applications/Topics	(as time permits)

## GRADES

A: 100 % { 88 %;    B: 87.99 % { 74 %;    C: 73.99 % { 60 %

## GRADING SCHEME

Homework (best 5 assignments): 25 %

Tests (Jan. 30, Feb. 13, Mar. 4): 75 %

There will be three tests. These will be given on the following dates:

Test 1: Friday, January 30, 2004 in class, 2:00pm, SH309

Test 2: Friday, February 13, 2004 in class, 2:00pm, SH309

Test 3: Thursday, March 4, 2004 in class, 2:00pm, SH309

## HOMEWORK

In order to encourage students to keep up with the course and to prepare for the tests, a large number of problems from the text will be recommended. A small number of these problems will be collected and graded for credit. These seven homework assignments will be handed out in class and are due on Wednesday afternoons by 4:00 p.m. The best ve of these will be used in the calculation of your grade.

## QUIZZES

Each week, a non-credit quiz will be distributed. Solutions will be distributed the following week. The questions on the quizzes should be viewed as sample test questions.

## MATERIALS ON THE WEB:

All typeset course handouts will also be available from the instructor's web page:

<http://users.wpi.edu/~martin/TEACHING/2073/>

## IMPORTANT NOTES:

There will be no make-up tests.

The instructor does not curve grades. The student is able, throughout the course, to compute his or her own current test average and homework average and may judge their performance up to that point using the grade ranges on the obverse of this sheet.

If a student happens to miss a test for valid reasons (e.g., as evidenced by a doctor's note speci cally stating that the student was too ill to participate), then the weight of the remaining tests may be increased to compensate for the missing mark; in such a circumstance, the student will inform the instructor in person at his or her earliest chance.

No late assignments will be accepted for credit.

All cases of academic dishonesty will be pursued to the full extent allowed. Please see the Campus Planner & Resource Guide for details.

All students are expected to attend class whenever possible. If you necessarily must miss a class, be sure to obtain a copy of the lecture notes from a classmate. The instructor will not repeat lectures for students who have missed class.