

# MA2071 Syllabus

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**Office hours:** 10-11, 2-4 Tues  
or by appointment  
... or, just drop in

MA 2071 – C01-C04, C Term 2010

Matrices & Linear Algebra I

**Text:** “Linear Algebra and its Applications” by David C. Lay (3rd ed., Updated)

**Meetings:** 12:00–12:50 MTWRF

**TA:** Erin Kiley, SH204

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**TA Office Hours:** TBA

**Course web page:** <http://users.wpi.edu/~martin/TEACHING/2071/>

The goal of this course is to develop the basic language and techniques of matrix algebra and to introduce vector spaces and eigenvalues. 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. 14 to Jan. 15	<i>Linear Systems</i>	Secs. 1.1–1.2
Jan. 19 to Jan. 22	<i>Solving Linear Systems</i>	Secs. 1.3–1.5
Jan. 25 to Jan. 29	<i>Independence, Transformations</i>	Secs. 1.7–1.9
Feb. 1 to Feb. 5	<i>Matrix Algebra, Invertibility</i>	Secs. 2.1–2.4
Feb. 8 to Feb. 12	<i>Graphics, Rank, Determinants</i>	Secs. 2.7–2.9, 3.1–3.3
Feb. 15 to Feb. 19	<i>Intro to Vector Spaces</i>	Secs. 4.1–4.3
Feb. 22 to Feb. 26	<i>Vector Spaces</i>	Secs. 4.4–4.7
Mar. 1 to Mar. 5	<i>Eigenvalues and Eigenvectors</i>	5.1–5.4 as time permits

A selection of the following sections may also be covered if time permits:

Secs. 1.6, 1.10, 2.4–2.6, 4.8–4.9, 5.5, 5.8, 6.1–6.5, 7.1–7.2, 7.4.

## GRADING SCHEME

Homework (best 5 assignments): 25 %

Tests (Jan. 27, Feb. 17, Mar. 3): 75 %

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

**Test 1:** Wednesday, January 27, 2010 6:00–8:00 p.m. in OH107

**Test 2:** Wednesday, February 17, 2010 6:00–8:00 p.m. in OH107

**Test 3:** Wednesday, March 3, 2010 6:00–8:00 p.m. in Upper Perreault Hall, Fuller Labs

Please note that no calculators, cellphones or other electronic devices are permitted to be out in the open during any test.

**IMPORTANT:** Any scheduling conflicts that will absolutely prevent you from attending any of the above tests MUST be brought to my attention, IN PERSON, on or before January 21. For students who have valid conflicts (e.g., varsity sport event or regular employment), an alternative testing plan will be made.

After January 21, these 6-8pm obligations are to be considered as “on your schedule”; any conflicts that arise after that date will have to be resolved with the other party.

## GRADES

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

## 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 problems will be collected each week and graded for credit. It is my expectation that these assignments will be completed with great care and will be presented professionally.

These **seven homework assignments** will be distributed via the course web page and are typically due on Tuesdays:

Jan. 20 (Wed), Jan. 26, Feb. 2, Feb. 9, Feb. 16, Feb. 23, Mar. 2.

Assignments are due at 4:30pm and are to be submitted to the course drop box (on the bottom row of the faculty mailboxes) in the Math Department Office, SH108.

The best five of these seven grades will be averaged to obtain your “Homework” grade for the course.

## QUIZZES

Each Friday, a non-credit quiz will be distributed upon exit from the lecture. Solutions will be distributed in the following conference section. The questions on the quizzes should be viewed as sample test questions.

## CONFERENCE SECTIONS

Section	Meeting Time	Location	PLA/TA
C01	Wed. 12:00 – 12:50	SH106	Erin Kiley
C02	Wed. 1:00 – 1:50	SH106	Alyssa Gottshall
C03	Wed. 2:00 – 2:50	SH106	Grant Fredricks
C04	Wed. 3:00 – 3:50	SH106	Nghia Hoang

These sessions provide one-on-one contact with experienced senior students. Students may work in groups, solve sample problems at the blackboard, or go over test solutions, among other activities. This is an important and integral part of the course. **All students are expected to attend** their respective conference sections.

## IMPORTANT NOTES

- There will be no make-up tests. Unless explicit arrangements are made by January 21, 2010, the student is expected to attend all three tests.
- If a student happens to miss a test for valid reasons (e.g., as evidenced by a doctor's note specifically 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.
- No late assignments will be accepted for credit.

## STUDENTS WITH DISABILITIES

If you need course adaptations or accommodations because of a disability, or if you have medical information to share with me, please make an appointment with me as soon as possible. My office location and hours are listed at the top of this syllabus. If you have not already done so, students with disabilities, who believe that they may need accommodations in this class, are encouraged to contact the Disability Services Office (DSO), as soon as possible to ensure that such accommodations are implemented in a timely fashion. The DSO is located in Daniels Hall, (508) 831-5235.

## **ACADEMIC INTEGRITY**

Please read the STUDENT GUIDE TO ACADEMIC INTEGRITY AT WPI and all its pages. For example, the page WHAT CONSTITUTES ACADEMIC DISHONESTY? – found here:

<http://www.wpi.edu/Pubs/Policies/Honesty/Students/constitutes.html>

– gives some examples of academic dishonesty; i.e. acts that interfere with the process of evaluation by misrepresenting the relation between the work being evaluated (or the resulting evaluation) and the student's actual state of knowledge.

Each student is responsible for familiarizing him- or herself with academic integrity issues and policies at WPI. All suspected cases of dishonesty will be fully investigated.