Course Outline: Math 4350-001, Spring 06

Office hours

My office hours: Monday, Wednesday, and Friday, 12:20–12:50 and 1:50–2:10 — that is, immediately before and after class — in the Rocket Hall lobby. This means that you can call or stop by at these times without an appointment and I am sure to be there.

I am also available at other times, but for these you must make an appointment. Feel free to ask for office hour appointments at other times if you cannot make it to my official office hours. If you call me when I am not in my office then you can leave a voice mail message and I will get back to you as soon as I can. I tend to listen to my voice mail messages only on Wednesdays after class, so often email is a faster way to get in touch with me.

> *Office: UH 4080e. Phone: 419 530 2975.*
> *Email: paul.hewitt at utoledo.edu.*
> *Web page: http://livetoad.org/.*

Course calendar

ML King Day	Mon	16 Jan	
Exam 1	Fri	20 Jan	
Exam 2	Fri	3 Mar	*last day to withdraw*
Spring Break		6–10 Mar	
Exam 3	Fri	31 Mar	
Exam 4	Wed	3 May	12:30–2:30

Prerequisites

The prerequisite for this course is elementary linear algebra, including the following.

- Systems of equations: solution by LU-factorization (Gaussian elimination).

- Vector spaces: basis, dimension, linear independence, subspaces, and linear span.

- Linear transformations: kernel, image, rank, and nullity.

- Matrix of a linear transformation: row space, null space, column space, and change of basis.

- Eigenvalues, eigenvectors, and diagonalization (Jordan canonical form).

If you have never seen most of these concepts before then you are not ready to take this class. However, if you have seen most but not all, or seen them all but have forgotten most, then you should be able to succeed in this class, altho you will have to work hard at the beginning to refresh your memory and fill in any gaps.

I will spend the first several days reviewing this material. I will also post links to online books which you can use to bolster your linear algebra foundations. Some time in the second or third week we will have an exam on these fundamentals. If you do well on this exam (say at least 80%) then you should have no trouble with this course.

Lecture notes and online textbooks

We will not use a textbook in this course. Instead I will post lecture notes on the web. I will also post links to online textbooks for the elementary linear algebra prerequisites.

Homework assignments

The lecture notes will include homework assignments, with due dates. Each problem set will be worth 20 points. Your 10 best scores will count towards your final grade. Your solutions must be neat and show all work. If you do not show your work then you will not receive credit for your solution. When you turn in your assignment fold your papers lengthwise, and write your name, the course number, and due date on the outside.

Computer experiments

We will be exploring some of the concepts using computer experiments. Some of the homework assignments will require the use of computer software. I will post links to various software resources.

Exams

We will have 4 exams, each worth 100-points. The first exam will cover the prerequisite elementary linear algebra. Everyone will take this exam. If you do well on this exam (at least 80%) and if you keep up with the homework assignments then you will not have to take any subsequent exams. If you do not do well on the first exam, or if you do not do acceptable work on all of the homework assignments, then you will have to take the subsequent exams. You may take any optional exam if you want to try to improve your grade.

On each of the exams there will be two types of questions: computational problems, similar to the homework exercises; and multiple choice questons based on the definitions, terminology, and theorems discussed in the lecture notes.

Attendance

I will not accept late assignments under any circumstances. It will not affect your final grade if you miss one or two assignments since only your 10 best scores count towards your final grade. However, if you are in the habit of missing classes and assignments regularly then probably you will fail. Making up missed assignments or quizzes will not help. There will be no exceptions to this rule. Ever. Don't ask.

I will give make-up exams only in case of a documented emergency, such as illness or a funeral. If you are sick the day of the exam then you must call or email that same day if you expect to be able to make up the exam. Otherwise you must arrange for a make-up exam ahead of time. If I am not in my office then you can leave a voice mail message. If you fail to show up for a exam and do not contact me about it until afterwords then you will not be able to make up that exam — you will get a 0 for that exam.

If, prior to 24 March, you stop coming to class for more than a week without contacting me then I will give you an IW (instructor's withdrawal). If you stop attending after that date then you will get an F. If you need an IW because you are unable to finish the class for some reason then you must contact me before 24 March, since that is the last day that IW grades can be assigned.

Grades

Your final grade will be based on the following scale: 90%: A, 80%: B, 70%: C; 60%: D.

If you want me to post your grades under a nickname then bring me a 3×5 card with your name, an email address, and the nickname you want to use — preferably something not obvious!