

Syllabus for Math 572, Winter 2007

Linear Algebra for Applications II

Please read this syllabus carefully. You will be responsible for all the information given here, and for any modifications to it that may be announced in class. Updated information and handouts can be accessed at my website: <http://www.math.ohio-state.edu/~kao/>

Instructor: Chiu-Yen Kao

Texts: (1) Linear Algebra with Applications 7th Ed. Steven Leon
(2) Linear Algebra Labs with MATLAB 3rd Ed. David Hill and David Zitarelli (H&Z)

Lecture: MWF 9:30am @ EA295

Handouts: [MATLAB Overview](#) (MO)

Topics: Linear systems of equations; vector spaces, matrices, linear operators; inner products, projections and least squares, approximations of eigenvalue problems. Applications.

Office Hours: MWF 10:30-11:30am @ MW 410 and by appointment

E-mails: kao@math.ohio-state.edu

Tentative Schedule:

L5.3, 5.4 review (2 classes) | review of Math 571 and, in particular, review of least squares problems and inner products

L5.5, H&Z 10.1 (2 classes) | orthonormal sets

L5.6, H&Z 10.2, 10.3 (2 classes) | Gram-Schmidt orthogonalization process

L5.7 Handout (2 classes) | Fourier Series

-----first midterm-----

L4, H&Z 11, 12.1, 12.3, 12.4, graphics (4 classes) | linear transformations and graphics

L6.1, H&Z 13.1, H&Z 13.2 (1 class) | introduction to eigenvalues and eieenvectors

L6.2 (2 classes) | solving systems of linear differential equations

L6.3, H&Z 13.3 (1 class) | diagonalizing a matrix

-----second midterm-----

L6.4 (1 class) | Hermetian matrices

L6.5 (1 class) | the singular value decomposition

L6.6, 6.7 (2 classes) | quadratic forms and positive definite matrices

-----final exam-----

Note: final exam will cover all subjects

Grading: first midterm (20%), second midterm (20%), final exam(30%), class participation (5%), and homework (25%). The letter grade will be with an approximately 90(A)-80(B)-70(C)-60(D) scale.

Class Participation: You are expected to attend all lectures, and are responsible for all information given out during them. Excessive absences without any medical reasons will result in points lost from your class participation grade. Activities such as sleeping, reading, listening to headsets, browsing the web, conversing with other students, and so on do not constitute class participation. Students engaging in such behavior during the lecture will be counted as absent.

Homework: I encourage students to discuss HW with each other. However, you should still write your own answers. No late HW will be accepted. The lowest grade HW will be dropped. There will be a lot of homework exercises assigned in addition to those to be turned in. Many are very similar. Do enough so that you feel confident that you know how to do the rest.

Examination: Final exam will be held on Tue, March 13, 9:30~11:18am @EA 295. University regulations require that you take it at that time. It will cover all sections listed in the class schedule. All tests must be taken at the scheduled times, except in extraordinary circumstances. If you cannot take a test at the scheduled time, you should contact me in advance. Check the grading of your exams carefully when they are returned; all grading errors should be brought to my attention as soon as possible. **No calculators will be allowed during any exams.**

***Any student who feels s/he may need an accommodation based on the impact of a disability should contact me privately to discuss your specific needs. Please contact the Office for Disability Services at 614-292-3307 in room 150 Pomerene Hall to coordinate reasonable accommodations for students with documented disabilities. <http://www.ods.ohio-state.edu>**

***It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term "academic misconduct" includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee. For additional information, see the Code of Student Conduct http://studentaffairs.osu.edu/resource_csc.asp.**