MATH 2310 SYLLABUS FALL 2009

Note: some of the information in this document has not yet been finalized.

General information Your instructors are

Dr. A. Minchenko, Malott Hall 408, andreim@math.cornell.edu.

MWF 1:25-2:15 MLT 207

Office hours: TBA.

Dr. R. Vale, Malott Hall 583, rvale@math.cornell.edu.

MWF 12:20-1:10 MLT 203

Office hours: 3-5 Thursday in Malott 583.

The grader is Derek Lougee.

Website: http://www.math.cornell.edu/~rvale/math2310.html.

Scope We intend to cover Chapters 1 to 7 of the textbook

Kolman & Hill, *Elementary Linear Algebra with Applications* (9th ed.), Pearson, 1996 (ISBN: 978-0-13-229654-0)

Lecture plan We may not follow this plan exactly but it gives a rough idea of what will be taught when. We will spend about 2 weeks on each of the chapters we cover. The following topics will be covered.

- Linear systems.
- Vectors and matrices.
- Solving linear systems via Gaussian elimination; echelon form.
- Matrix addition; multiplication; inversion.
- Determinants.
- Cramer's rule.
- Vector spaces.

- Span; linear independence; bases.
- Rank and nullity.
- Length; inner product spaces.
- Orthonormal bases; the Gram-Schmidt process.
- Least squares.
- Linear transformations.
- Eigenvalues.
- Diagonalization.

Coursework: There will be homework assignments which count towards your final grade. There will be a total of 7 homeworks; one for each chapter. Each lecturer will set separate homework assignments, but they should be of approximately the same length and difficulty.

Exams and grading: There will be a one-hour quiz in class before fall break (probably on 2 October). There will also be a prelim before Thanksgiving, tentative date: 16 November. The final will be held on 10 December.

The course grade will be weighted roughly as follows

- Homework 20%
- Prelim 20%
- Quiz 10%
- Final 50%

Academic integrity You are encouraged to discuss the theory and problems from the course with your classmates. However, directly copying from other students is not allowed. You are obliged to abide by the Code of Academic Integrity.

Help and feedback You are encouraged to approach us if anything is unclear. Questions affecting a sizeable part of the class will be discussed in the lecture. We will welcome any feedback you have about teaching or any concerns about the course. If there is anything that you feel can be improved (eg. the lecturer is standing in front of the blackboard and it

is hard to take notes) it is much better to discuss it during the course than to wait until the end!

Important note: the final day to add/drop a class without petition is October 16.