
COURSE INFORMATION

MATH 2275 – Winter 2006

This course is the second of two courses (the first being Math 2255) on linear algebra. In this course we learn about real eigenvalues and eigenvectors, orthogonality and least squares, and symmetric matrices and quadratic forms.

Time Class: MWF 10:30-11:30
Place RB 1045
Instructor Adam Van Tuyl
 Office: RB 2015
 Office Hours: Tues 2:30-3:30 Wed. 3:30-4:30
Text *Linear Algebra and Its Applications* (3rd Edition) by David C. Lay
Email avantuyl@sleet.lakeheadu.ca
Web Page http://flash.lakeheadu.ca/~avantuyl/courses/2006_winter_math2275.html

Contact Information. The best way to get a hold of me is via email. The class webpage is also a good source of information. I update the webpage after every class.

Outline. Math 2275 is a one semester course. We will cover the following sections of Lay's book:

- Chapter 5.1-5.8 – Eigenvalues and Eigenvectors
- Chapter 6.1-6.8 – Orthogonality and Least Squares
- Chapter 7.1-7.5 – Symmetric Matrices and Quadratic Forms

Marking Scheme. The evaluation is composed of three components.

1. Homework (10%) A homework assignment will be given out every Wednesday. It will be due the following Wednesday by the end of class. There will be 9 homework assignments per semester. The homework assignment with the lowest grade will not be counted. The solutions will be posted on ERES, the electronic reserve of Lakehead Library, once the assignments have been handed back (a link will be available on the class webpage).

All of the homework questions (with some possible exceptions) will be taken from the text book. Exercises will be marked out of 2 or 4 points, depending upon the level of difficulty.

Questions out of 2 points will be graded as follows:

- [2 pts] Near perfect or perfect solution. A near perfect solution is a solution that is correct up to the final stage with possible mistake or sign error at the last step.
- [1 pt] The solution shows some of the needed ideas, but fails to have the final solution.
- [0 pts] Little or no progress is made toward the solution.

Questions out of 4 points will be graded as follows:

- [4 pts] Near perfect or perfect solution. A near perfect solution is a solution that is correct up to the final stage with possible mistake or sign error at the last step.
- [3 pts] Most of the needed ideas are present, but misses a key point, or is poorly written.
- [2 pt] The solution shows some of the needed ideas, but fails to have the final solution.
- [1 pt] One or two initial steps are made.
- [0 pts] Little or no progress is made toward the solution.

Further notes on homework: Every assignment must contain: the course number, the assignment number, your name, and your student ID. Homework must *always* be stapled together (no paperclips, folding the pages, etc., will be accepted). Failure to do this will result in **5 points deducted** from the assignment.

Homework will have **5 points deducted** for every day (the weekend is counted as one day) that it is late. Once the solutions have been posted, you may no longer submit an assignment.

Homework may be handed in early by either giving it to me or by placing it under my office door.

2. Tests (2 Midterms, 25% each) There will be two midterms. The dates of the midterms are (provisionally):

February 8, 2006 - Midterm 1
March 15, 2006 - Midterm 2

3. Exams (Final Exam 40%) A final exam will be given in April. The exam will be cumulative. The exact dates will be given later once the exam schedules are ready. A friendly piece of advice: do not book your plane ticket home until you are certain about the exam schedule. A flight is not an acceptable excuse for missing an exam.

4. Challenge Assignments (up to 5% Bonus) I will continue the tradition begun in Math 2255 of giving challenge assignments. I will give up to 5 challenging assignments in addition to the regular assignments. The purpose of these assignments is to get you to think more deeply about the material. You are under no obligation to do these assignments. Students with correct solutions will get extra credit (up to 5% or 1% each). More details will follow with the first such assignment.

Class Policies. Though attendance is not mandatory, I would appreciate the fact that you show up on time if you do decide to come to class.

Changing Marks. If you disagree and/or have a problem with a particular mark on an assignment or exam, please use the following procedure. First, check your assignment/exam against the solutions. If this does not clear up any problems, on the front of the assignment/exam, please write the question number you want regraded, and why it should be regraded. Then hand it back in. I will then take a look at the assignment/exam and see if the mark needs to be adjusted. If there is simply an addition error with the marks, please hand it back in to me with the correct number at the top.

Exams and tests must be taken on the date assigned, except if there are medical or family emergencies. In these cases, notes will be required.

Important Dates.

Jan. 3, 2006 - First Semester begins
Feb. 8, 2006 - Midterm 1
Feb. 20-24, 2006 - Reading Break
Feb 28, 2006 - Last day to drop course without penalty
March 15, 2006 - Midterm 2
April 3, 2006 - Second semester ends
April 7-24 - Final Exams