Syllabus for MA 322 002 - Matrix Algebra and its Applications (Fall 2014)

Updated information can be found on the web page of the course at http://www.ms.uky.edu/~uwenagel/MATRIX-f14/matrix-f14.html

Basic Information

Time and Place: MWF, 11:00-11:50 am, CB 349

    Students are expected to attend all lectures.

Instructor: Uwe Nagel, POT 763, 257-6793, uwe.nagel@uky.edu and www.ms.uky.edu/~uwenagel.

Office Hours: MWF, 1:00-1:50 pm in POT 763, or by appointment.
You can also consult me by email.

Office Hours of the Teaching Assistant, Robert Wolf:
   Tuesday, 10:00-11:00 am in Mathskeller
   Thursday, 9:30 -- 10:30 am in Mathskeller.

Exams: There will be two midterm and one final exam.

- Exam 1 (CB 349, October 3, 11:00-11:50 am)
- Exam 2 (CB 349, November 5, 11:00-11:50 am)
- Final exam (CB 349, December 17, 3:30-5:30 pm).

All exams are cumulative in the sense that students are expected to know also the material that has been on previous exams. The use of calculators or cell phones is not allowed during exams.

Textbook: *Linear algebra and its applications* (4th edition) by David C. Lay, ISBN 0-321-38517-9.

Matrix algebra has its roots in the study of simultaneous linear equations in several variables. The development of systematic methods to find and to discuss the solutions of linear equations has lead to fundamental concepts and methods such as matrix, Gaussian elimination, vector space, dimension, linear transformation, determinant, eigenvalue, inner product. The goal of the course is to become very familiar with all these objects.
Ideas, methods, and the language of matrix algebra are widely used in all areas of mathematics and most other sciences. The course will basically cover Chapters 1-7 of the textbook.

Homework and Quizzes

A short **quiz** will be given during the last 10 minutes of each Friday lecture beginning September 5, except during exam weeks. Make-up quizzes will not be given without an excused absence.

There will be two types of homework.

For the **web-based homework** we use [WebWorK](). Your **username** is your **LinkBlue ID** (in upper case). Your **initial password** is **your UK student ID number** (8 digits). You can (and should) change your password.
For symbols and functions available in WeBWorK, please consult [WebWorK functions]().

Written homework problems will be assigned and collected regularly. The homework problems will be announced in class and on the web page of the class.

In order to receive credit, homework solutions must be written out neatly and handed in at the beginning of the class on the due date. Late homework will not be accepted unless the delay is due to an excused absence. You are encouraged to discuss homework problems and the course material with each other. However, when it comes time for you to write up the solutions, I expect you to do this completely on your own. It would be the best for your understanding if you put aside your notes from the discussions with your classmates and wrote up the solutions entirely from scratch. Working together on the exams, of course, is expressly forbidden.

   HW 1: Section 1.1: Problems 4 (2 points), 14, (2 points), 24 (4 points). Due on **Wednesday, Sept 3**

Grades

You can earn up to 450 points in the course based on the following activities:

Attendance	20 points
Homework	55 points (25 points for the written and 30 points for the on-line homework.)
Quizzes	50 points
First Midterm	100 points
Second Midterm	100 points
Final Exam	125 points

In this model an A requires at least 405 points (90% or more), B at least 360 (80% or more), C at least 315 (70% or more), D at least 270 (60% or more), E for anything else.