Math 436: Linear Algebra - Fall 2014

Instructor: Professor Kirsten Eisenträger
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Office Phone: (814) 863-4127
Class hours: MWF 1:25–2:15, 204 Sackett (Section 002)
Class hours: MWF 2:30–3:20, 204 Sackett (Section 001)
Office hours: We 3:35-4:35pm, Th 10-11am, and by appointment
Course webpage: http://www.personal.psu.edu/kxe8/courses/math436

Prerequisites: Math 311W (which provides background on reading and writing proofs, groups, and fields). Familiarity with linear algebra at the level of Math 220 may be helpful, but is not required.

Course Text: Linear Algebra Done Right (2nd Edition), by Sheldon Axler. We will cover most of the book.

Course description: The course will cover vector spaces, finite-dimensional vector spaces, linear maps, polynomials, eigenvalues and eigenvectors, inner-product spaces, operators on inner-product spaces, operators on complex vector spaces, operators on real vector spaces, trace and determinant. This is a second course in linear algebra, and it emphasizes proofs and an abstract point of view (understanding vector spaces and linear transformations, not manipulating lists and matrices of numbers). We build up to and use structure theorems for linear operators.

Homework: There will be twelve homework assignments which will be collected and graded. Homework is due at the beginning of class on the given due date. Late homework will not be accepted. You are encouraged to discuss the homework assignments with other students in the class; however, if you do, you should write on your homework submission the names of the students with whom you discussed the assignment. You are required to write up your own solutions in your own words. The two lowest homework scores will be dropped at the end of the semester.

Midterm Exams: Two in-class midterm exams will be given. The first midterm will be on Friday, October 3, 2014. The second midterm will be on Friday, November 7, 2014.

Final Exam: The final examination in the course will be comprehensive. It will be given during the university’s final examination week, December 15-19, 2014. Do not make plans to leave the university before the end of this week. Travel plans do not constitute an official university excuse for missing an examination or for obtaining a conflict or makeup examination. Conflicts for the final exam are determined by scheduling, they cannot be scheduled through the Mathematics Department. A student with a potential final exam conflict must
take action to request a conflict exam through e-lion between September 29 and October 19, 2014.

**NOTE:** If you miss an exam without an official excuse (such as illness or official university business), then you may be allowed to take a makeup exam, but with an automatic 25% deduction from the grade. To avoid this deduction, you must notify the instructor, with your official excuse, before the date and time of the exam. This notification may be performed in person or via e-mail.

**Course Grades:** Grades will be assigned on the basis of 500 points, distributed as follows:

- Midterm Exam 1 100 points
- Midterm Exam 2 100 points
- Homework 150 points
- Final Exam 150 points

**Guideline for letter grades:** \( \geq 450 \) points guarantees an A or A-, \( \geq 400 \) points guarantees a B+, B or B-, \( \geq 350 \) points guarantees a C+ or C, \( \geq 300 \) points guarantees a D, and below 300 points will get an F. Note that these ranges may be adjusted downward.

**Academic integrity statement:** All Penn State policies regarding ethics and honorable behavior apply to this course.

**Disability Statement** Penn State welcomes students with disabilities into the University’s educational programs. Every Penn State campus has an office for students with disabilities. The Office for Disability Services (ODS) Web site provides contact information for every Penn State campus: [http://equity.psu.edu/ods/dcl](http://equity.psu.edu/ods/dcl). For further information, please visit the Office for Disability Services Web site: [http://equity.psu.edu/ods](http://equity.psu.edu/ods).