California State University, Northridge

MATH 462: Advanced Linear Algebra, Summer 2010

Class Number: 10439; Schedule: M-T-W-Th 6:00pm–7:40pm in CR5114.

Instructor: Dr. Vladislav Panferov, office SN 129, phone (818)677-2326
Email: `vladislav.panferov@csun.edu`
Course webpage: `www.csun.edu/~panferov/math462/`
Office hours (tentative: check webpage for possible updates): Tue 4-6pm, Thu 4-6pm, or by appointment (email).

Course description: "Linear Algebra with Proofs": Vector spaces, linear independence, bases, dimension. Linear transformations. Determinants. Diagonalization of linear transformations. Jordan canonical forms. Symmetric and orthogonal matrices, conditioning and the Rayleigh quotient, singular-value decomposition and pseudoinverse.

Text: *Linear Algebra*, by S. H. Friedberg, A. J. Insel, L. E. Spence, 4th edition, Prentice Hall, 2003.

Course outline (tentative): Chapters 1, 2, 4, 5, 7 (without *-sections), 6.1-6.7, 6.10.

Recommended references: *Linear Algebra*, by K. M. Hoffman and R. Kunze; 2nd edition, Prentice Hall, 1971; *Linear Algebra*, by G. E. Shilov, Dover, 1977; *Linear Algebra with Applications*, by O. Bretscher, 4th ed, Pearson Prentice Hall, 2009 or 3rd ed, 2005 (the last one is a "MATH 262" book).

Prerequisites: MATH 262, MATH 320 or equivalent courses.

Grading: 25% quizzes (given in class), 40% two midterm tests, 35% final exam (cumulative). The percentages are generally translated into letter grades using the following scale: 90-100% A; 80-89% B, 70-79% C, 60-69% D, 0-59% F. There will be no "grading on the curve", however the cutoff numbers for the grades may be lowered, at instructor's discretion, based on the overall performance of the class.

Homework: Homework is the course's most essential component. You are expected to solve a large number of problems each week, the list of which will be announced in class or on the course webpage. Homework problems will not be graded; however, selected problems will be included in quizzes.

Tests/quizzes: Weekly quizzes (15 minutes) will be scheduled on Tuesdays, starting on July 13. Lowest quiz score will be dropped from grading. There will be two in-class midterm tests, scheduled for July 22 and August 5 (Thursdays). All tests and quizzes will be closed books/notes.

Make-ups: There will be no make-ups for tests or quizzes, unless in truly exceptional cases, for a valid and well-documented reason. In such case arrangements for an alternate date and time should be made prior to the scheduled test date, if possible.

Final exam: On Thursday August 12, 2010, 6:00 - 8:00pm in CR 5114.

Calculators: A graphing calculator or a computer software such as MATLAB may be useful for solution of some of the homework problems. However, graphing calculators will <u>not</u> be allowed on midterm or final exams. A basic scientific calculator is OK (example, TI-30XII, or similar).