Linear Algebra Syllabus
MATH 2418.001
MWF 2:00-2:50 p.m.
JO 3.516
Fall 2005

Instructor: Dr. Paul Stanford
Text Book: Elementary Linear Algebra by Howard Anton (ninth edition).

Contact Information
Email: paul.stanford@utdallas.edu
Office hours: MW 4:00-5:00 p.m. in ECSN 3.910, MW 8:15-8:30 p.m. in FN 2.104, and by appointment.

Prerequisite: MATH 2419 (Calculus), or consent of instructor.

Corequisite: Students must be enrolled in one of the problem sessions MATH 2018.301 or MATH 2018.303.

Teaching Assistant: Kushan Yin in FO 1.102.

Course Description
The main goal of the course is the presentation of some fundamental techniques of linear algebra. The concepts of vector spaces, matrices, determinants, inverses, eigenvalues and eigenvectors will be developed.

Chapter 1: Systems of Linear Equations and Matrices (sections 1.1, 1.2, 1.3, 1.4, 1.5, 1.6 and 1.7)

Chapter 2: Determinants (sections 2.1, 2.2, 2.3, and 2.4).

Chapter 3: Vectors in 2-Space and 3-Space (sections.3.1, 3.2, 3.3, and 3.5).

Chapter 4: Euclidean Vector Spaces (sections.4.1, 4.2, 4.3 and 4.4).

Chapter 5: General Vector Spaces (sections 5.1, 5.2, 5.3, 5.4, 5.5 and 5.6).

Chapter 6: Inner Product Spaces (6.1, 6.2, 6.3, 6.4, 6.5 and 6.6).

Chapter 7: Eigenvalues and Eigenvectors (sections. 7.1, 7.2 and 7.3).

Chapter 8: Linear Transformations (sections.8.1, 8.2, 8.3, 8.4, 8.5 and 8.6) as time permits.

Examinations
There will be two regular examinations and a final examination. NO MAKE-UPS. Missed exams are a zero. See below for dates and the calculation of grades. Graphing calculators will NOT be allowed: only non-alpha display scientific calculators are permitted.

All students are expected to take the examinations at the announced time. Cheating will NOT

be tolerated. Students are required to inform the lecturer of suspected honor code violations. On all problems, you must show your work. No work, no credit (even for correct answers). In general, there will be no make up exams or quizzes. There will be no incompletes except in the direst of situations.

Problem Assignment
Problems will be assigned on a regular basis. Answers to most of these problems are given at the back of the textbook. Complete solutions to many of these problems may be found in the Solutions Manual, which is on reserve at the library (and may be available in the bookstore). You should work several problems of each type, and working more than the class assignments is strongly encouraged. Do not use the solutions at the back of the textbook before you have exhausted all possibilities (including asking the TA and the instructor). Most of these problems will be discussed in the problem sections.

Problem Sessions and quizzes
During each of the problem solving meetings a quiz will be given, lasting about 15-20 minutes. There will be a total of approximately 10 quizzes. The TA conducting each section will answer questions on the assignments, supply additional background material, discuss the previous quiz, comment on your exams, and may ask you to work problems. Occasionally, the problem section may be used to remind you of the material covered in previous courses and deemed essential to the present course. At times you are strongly encouraged to ask questions during these problem sections.

Calculation of Grade
Each quiz is worth 25 points. The lowest two quiz scores will be dropped. The remaining quizzes are counted and converted to a percentage, giving a possible total of 100 points. Each regular examination is also worth 100 points. Only the best two scores from the quiz total or the regular exams will be used in the grade calculation, giving a possible total of 200 points. (In other words, the lowest of the three scores is dropped.) The comprehensive final examination is worth 200 points. This score cannot be dropped.

These scores are weighted so that the best two of three scores contribute 60% towards the overall grade, and the final contributes 40% toward the overall grade.

Grade Scale
[97,100] A+
[93,97) A
[90,93) A-
[87,90) B+
[83,87) B
[80,83) B-
[77,80) C+
[73,77) C
[70,73) C-
[65,70) D+
[60,65) D
[55,60) D-
[0, 55) F

Midterm grades
Midterm grades will be computed and submitted to the records office when requested. This

grade will be computed in the following manner: Average of all quizzes up to this time (no drops) 50% Average of all exams up to this time (no drops) 50%

Important Dates (and see Academic Calendar)

Friday, August 19th: First Day of Class.

Monday, September 5th: University Holiday: Labor Day.

Friday, September 2nd: Last day to drop without a W.

Wednesday September 21st: **Exam I** (subject to change).

Thursday, September 22nd: WF or WP withdraw period begins.

Thursday, October 20th: Last day to withdraw with WF/WP.

Wednesday October 26th: **Exam II** (subject to change).

Thursday, November 24th: University Holiday: Thanksgiving Day.

Friday, November 25th: University Holiday: Thanksgiving.

Monday, November 28th: Last Day of Class.

Monday December 5th: Comprehensive Final, 2:00 p.m. - 4:45 p.m.

Homework Assignments

Chapter 1
Section 1.1: 1-9 odd, 11, 12, 13
Section 1.2: 1-17 odd, 23
Section 1.3: 1-21 odd, 25, 29
Section 1.4: 1-11 odd, 21
Section 1.5: 1-11 odd
Section 1.6: 1-25 odd
Section 1.7: 1-9 odd, 17

Chapter 2
Section 2.1: 1-9 odd 17-23 odd
Section 2.2: 1-11 odd, 12, 13
Section 2.3: 1-11 odd, 14, 15
Section 2.4: 1-13 odd, 17, 20

Chapter 3
Section 3.1: 1-13odd
Section 3.2: 1-9 odd
Section 3.3: 1-19 odd
Section 3.5: 1-29 odd

Chapter 4
Section 4.1: 1-19 odd
Section 4.2: 1-21 odd
Section 4.3: 1-21 odd
Section 4.4: 1-19 odd

Chapter 5
Section 5.1: 1-17 odd
Section 5.2: 1-21 odd, 22
Section 5.3: 1-19 odd
Section 5.4: 1-19 odd
Section 5.5: 1-13 odd
Section 5.6: 1-13 odd

Chapter 6
Section 6.1: 1-21 odd
Section 6.2: 1-17 odd
Section 6.3: 1-17 odd, 24, 29
Section 6.4: 1-9 odd
Section 6.5: 1-11 odd
Section 6.6: 1-11 odd

Chapter 7
Section 7.1: 1-21 odd
Section 7.2: 1-21 odd, 22
Section 7.3: 1-9 odd

Chapter 8
Section 8.1: 1-27 odd
Section 8.2: 1-19 odd
Section 8.3: 1-15 odd
Section 8.4: 1-17 odd
Section 8.5: 1-17 odd
Section 8.6: 1-11 odd