

Linear Algebra Syllabus & Homework

Math 251 Section 004, Spring 2011

Professor: Fernando Schwartz, 204 Ayres Hall, fernando@math.utk.edu
Course Webpage: <http://www.math.utk.edu/~fernando>
Lectures: Tuesdays & Thursdays 9:40-10:55am, Ayres 122
Office Hours: Tuesdays & Thursdays 1:30-2:30pm, or by appointment.
Text: *Elementary Linear Algebra*, by Howard Anton, 10th Edition.

Course evaluation: There are three exams, each worth up to 100 points. Homework counts for another 100 points. The final is worth up to 200 points. The maximum course score is 600. Your grade is roughly computed as follows: 90% or higher of the maximum course score is an A, between 80-90% is a B, 70-80% a C, and so on. Homework is collected before the end of each class. Late homework is not accepted. Your homework score is the average of all but the worst assignment grade.

Special Accommodations: Any student who feels that s/he may need an accommodation based on the impact of a disability should contact me privately to discuss your specific needs. Please contact the Office of Disability Services at 974-6087 to coordinate reasonable accommodations for students with documented disabilities. If you find that circumstances will cause you to miss an exam, you **must** notify me **prior** to the exam. Besides email, you can leave a message for me at the departmental office 974-2461.

Academic Integrity: From Hilltopics 2010/2011, pg. 41:
The university expects that all academic work will provide an honest reflection of the knowledge and abilities of both students and faculty. Cheating, plagiarism, fabrication of data, providing unauthorized help, and other acts of academic dishonesty are abhorrent to the purposes for which the university exists. In support of its commitment to academic integrity, the university has adopted an Honor Statement.

Honor Statement: From Hilltopics 2010/2011, pg. 11:
An essential feature of The University of Tennessee is a commitment to maintaining an atmosphere of intellectual integrity and academic honesty. As a student of the University, I pledge that I will neither knowingly give nor receive any inappropriate assistance in academic work, thus affirming my own personal commitment to honor and integrity.
You should be familiar with the Classroom Behavior Expectations, which can be found at <http://www.math.utk.edu/Courses/Expectations.pdf>

Date	Topic(s) / Homework	Section(s)
1/13	SYSTEMS OF LINEAR EQUATIONS homework: 6, 10, 15, true-false (a)–(h)	1.1
1/18	GAUSSIAN ELIMINATION homework: 3,19,21,25,27,37,41/true-false (a)–(i)	1.2
1/20	MATRIX OPERATIONS homework: (1.3) 27, 29; (1.4) 18, 28, 39,	1.3, 1.4
1/25	INVERSES homework: (1.4) 54, 55; (1.5) 13,15,19	1.4, 1.5

1/27	INVERSES AND SYSTEMS, TRIANGULAR/SYMMETRIC MATRICES homework: (1.6) 18, 21, true/false (a)–(g); (1.7) 20, 21,22,32,33,41, true/false (all)	1.6, 1.7
2/1	APPLICATIONS OF LINEAR SYSTEMS homework: 3, 7, 11,15	1.8
2/3	DETERMINANTS homework: (2.1) 36,38,39,40,41; (2.2) 28, 29, 34, 35, 36; (2.3) 33, 34, 38, 39; Supplementary: 29, 33, 35, 36	ch.2
2/8	GEOMETRIC VECTORS AND ANALYTIC GEOMETRY homework: (3.1) 28, 30, 33; (3.2) 15, 16, 17, 18, 19, 32, 33, 34; (3.3) 5,7,9,19, 25	3.1, 3.2, 3.3
2/10	GEOMETRY OF EUCLIDEAN SPACE AND SYSTEMS homework: 9,13,17,21,22,23,24	3.4
2/15	VECTOR SPACES AND SUBSPACES homework: (4.2) 1,2,3,4,5	4.1, 4.2
2/17	EXAM 1 (Thursday)	
2/22	LINEAR INDEPENDENCE, COORDINATES, BASIS homework:(4.3) 3,7,8; (4.4) 3,9	4.3, 4.4
2/24	DIMENSION, CHANGE OF BASIS homework: ; (4.5) 7,8,9,13,16; (4.6) 1,2,12(b)(e),13(b)(e)	4.5, 4.6
3/1	ROW SPACE, COLUMN SPACE, AND NULL SPACE, MATRIX SPACES homework: 3,4,5,6,7,8,11,15, 16, 20	4.7
3/3	FUNDAMENTAL MATRIX SPACES homework: 2,4,5,7,8,12,16	4.8
3/8	MATRIX TRANSFORMATIONS homework: 10, 11, 16, 17, 18,19	4.9
3/10	PROPERTIES OF MATRIX TRANSFORMATIONS homework: 1,2,3,4,5,9,11,15,27	4.10
3/14-18	SPRING BREAK	
3/22	GRAM-SCHMIDT PROCESS homework: (6.3)9,17, 21,23, 26 (7.1) 1,3,4 (4.7) 15, 16, 20	6.3
3/24	EIGENVALUES, EIGENVECTORS AND DIAGONALIZATION homework: (5.1) 5,8,13,15,23 (5.2) 7,9,15,17,23	5.1, 5.2
3/29	COMPLEX VECTOR SPACES homework: 15,17,19,21,23,25	5.3
3/31	EXAM 2 (Thursday)	
4/5	APPLICATION TO DIFFERENTIAL EQUATIONS homework: 1,2,3,4	5.4
4/7	LEAST SQUARES homework: 3, 5, 9, 10, 15	6.4
4/12	LEAST SQUARES FITTING homework: 1, 3, 11	6.5
4/14	ORTHOGONAL DIAGONALIZATION homework: 1,3,5,14,17	7.2
4/19	QUADRATIC FORMS homework: 5,7,11,13,15,25,32	7.3
4/21	OPTIMIZATION PROBLEMS homework: 1,3,5,11,13,15,17	7.4
4/26	EXAM 3 (Tuesday)	
4/28	Review for the Final	
5/5	FINAL EXAM: 10:15am – 12:15pm Ayres 122	