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.

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

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<th>Topic(s) / Homework</th>
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<td>1/13</td>
<td>SYSTEMS OF LINEAR EQUATIONS homework: 6, 10, 15, true-false (a)–(h)</td>
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<td>1/18</td>
<td>GAUSSIAN ELIMINATION homework: 3,19,21,25,27,37,41/true-false (a)–(i)</td>
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<td>MATRIX OPERATIONS homework: (1.3) 27, 29; (1.4) 18, 28, 39,</td>
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<td>INVERSES homework: (1.4) 54, 55; (1.5) 13,15,19</td>
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1/27 Inverses and systems, triangular/symmetric matrices 1.6, 1.7
homework: (1.6) 18, 21, true/false (a)–(g); (1.7) 20, 21, 22, 32, 33, 41, true/false (all)

2/1 Applications of linear systems 1.8
homework: 3, 7, 11, 15

2/3 Determinants ch.2
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

2/8 Geometric vectors and analytic geometry 3.1, 3.2, 3.3
homework: (3.1) 28, 30, 33; (3.2) 15, 16, 17, 18, 19, 32, 33, 34; (3.3) 5, 7, 9, 19, 25

2/10 Geometry of Euclidean space and systems 3.4
homework: 9, 13, 17, 21, 22, 23, 24

2/15 Vector spaces and subspaces 4.1, 4.2
homework: (4.2) 1, 2, 3, 4, 5

2/17 EXAM 1 (Thursday)

2/22 Linear independence, coordinates, basis 4.3, 4.4
homework: (4.3) 3, 7, 8; (4.4) 3, 9

2/24 Dimension, change of basis 4.5, 4.6
homework: ; (4.5) 7, 8, 9, 13, 16; (4.6) 1, 2, 12(b)(e), 13(b)(e)

3/1 Row space, column space, and null space, matrix spaces 4.7
homework: 3, 4, 5, 6, 7, 8, 11, 15, 16, 20

3/3 Fundamental matrix spaces 4.8
homework: 2, 4, 5, 7, 8, 12, 16

3/8 Matrix transformations 4.9
homework: 10, 11, 16, 17, 18, 19

3/10 Properties of matrix transformations 4.10
homework: 1, 2, 3, 4, 5, 9, 11, 15, 27

3/14-18 SPRING BREAK

3/22 Gram-Schmidt process 6.3
homework: (6.3) 9, 17, 21, 23, 26 (7.1) 1, 3, 4 (4.7) 15, 16, 20

3/24 Eigenvalues, eigenvectors and diagonalization 5.1, 5.2
homework: (5.1) 5, 8, 13, 15, 23 (5.2) 7, 9, 15, 17, 23

3/29 Complex vector spaces 5.3
homework: 15, 17, 19, 21, 23, 25

3/31 EXAM 2 (Thursday)

4/5 Application to differential equations 5.4
homework: 1, 2, 3, 4

4/7 Least squares 6.4
homework: 3, 5, 9, 10, 15

4/12 Least squares fitting 6.5
homework: 1, 3, 11

4/14 Orthogonal diagonalization 7.2
homework: 1, 3, 5, 14, 17

4/19 Quadratic forms 7.3
homework: 5, 7, 11, 13, 15, 25, 32

4/21 Optimization problems 7.4
homework: 1, 3, 5, 11, 13, 15, 17

4/26 EXAM 3 (Tuesday)

4/28 Review for the Final

5/5 FINAL EXAM: 10:15am – 12:15pm Ayres 122