Math 230 — Honors Linear Algebra (Spring 2011)

Section	2
Time	Tu-Thu 1:25–2:15 pm
Location	Wegner G1
Instructor	Bala Krishnamoorthy
Office	Neill 325
Office Hours	Tue 3:00–4:00 pm, Wed 1:00-3:00 pm, or walk-in.
Email	kbala@wsu.edu
Course web page	http://www.wsu.edu/∼kbala/Math230.html
Book	David C. Lay —
	Linear Algebra and its Applications, Third edition (*updated*).
	Addison-Wesley, ISBN: 0-321-28713-4
References	Gilbert Strang —
	Introduction to Linear Algebra, Third edition.
	Wellesley Cambridge Press, ISBN: 09614-0889-8

Description of the Course: This course will present a low-level introduction to the basics of linear algebra and matrix theory. Topics covered include systems of linear equations, determinants and matrix inverses, rank, eigenvalues, and eigenvectors. Discussions will be limited to real numbers and real spaces. The software package MATLAB will be used to implement and explore some of the ideas discussed in class as part of a computer project.

Organization and Grading:

Plagiarism or cheating will not be tolerated. Such behavior will result in a zero grade for the graded item and possibly a failing grade for the entire course. Reasonable accommodations are available for students who have a documented disability. Please notify me during the first week of class of any accommodations needed for this course. Late notification may cause the requested accommodations to be unavailable. All accommodations must be approved through the Disability Resource Center (DRC) in Administration Annex room 206, 335-1566, drc@mail.wsu.edu.

Technology and Computer Assignment: Most of the homework problems could be done by hand. A calculator might be useful for doing some of the work, but I will encourage you **NOT** to use one. **Calculators will NOT be allowed in the exams**.

There will be a computer assignment involving the package MATLAB. You can access MATLAB at any of the computer labs in Neill Hall, or through the mymath page - http://my.math.wsu.edu. You will be asked to log in using your WSU ID. Check under "Software" to run MATLAB (and other packages).

Tentative Schedule for Math 230

N.B.: Sections from the text given under Details. Section(s) from which problems are due for each homework are indicated in braces.

Week	Lec #	Date	Details
1	1	Tue, Jan 11	systems of linear equations (1.1)
	2	Thu, Jan 13	1.1, row reduction, echelon forms (1.2)
2	3	Tue, Jan 18	row reduction, echelon forms (1.2)
	4	Thu, Jan 20	vector equations (1.3) **[HW 1 Due (1.1)]**
3	5	Tue, Jan 25	matrix equations (1.4)
	6	Thu, Jan 27	solution sets of linear systems (1.5) **[HW 2 Due (1.2,1.3)]**
4	7	Tue, Feb 1 15	linear independence (1.7)
	8	Thu, Feb 3	1.7, linear transformations (1.8) **[HW 3 Due (1.4,1.5)]**
5	9	Tue, Feb 8	linear transformations (1.8)
	10	Thu, Feb 10	matrix of linear transformation (1.9) **[HW 4 Due (1.7,1.8)]**
6	11	Tue, Feb 15	applied linear models (1.10), matrix operations (2.1)
	12	Thu, Feb 17	inverse of a matrix (2.2) **[HW 5 Due (1.9,1.10)]**
7	13	Tue, Feb 22	**Midterm (6 pm, WEBS 16)** review in-class
	14	Thu, Feb 24	invertible matrices (2.3)
8	15	Tue, Feb 13	*(no class)*
	16	Thu, Feb 15	2.3, subspaces of $\mathbb{R}^n$ (2.8) **[HW 6 Due (2.1,2,2)]**
9	17	Tue, Feb 20	2.8, dimension and rank (2.9, 4.5)
	18	Thu, Feb 22	dimension and rank (2.9, 4.5) **[HW 7 Due (2.3,2.8)]**
10	19	Tue, Feb 27	intro to determinants (3.1)
	20	Thu, Feb 29	3.1, properties of determinants (3.2) **[HW 8 Due (2.9,4.5)]**
11	21	Tue, Mar 3	properties of determinants (3.2)
	22	Thu, Mar 5	eigenvalues and eigenvectors (5.1) **[HW 9 Due (3.1)]**
12	23	Tue, Mar 10	5.1, characteristic equation (5.2)
	24	Thu, Mar 12	characteristic equation (5.2) **[HW 10 Due (3.2)]**
13	25	Tue, Mar 17	characteristic equation (5.2)
	26	Thu, Mar 19	more on eigenvalues **[HW 11 Due (5.1)]**
14		Tue, Mar 26	*T'giving break*
		Thu, Mar 28	*T'giving break*
15	27	Tue, Apr 1	inner product, length, orthogonality (6.1)
	28	Thu, Apr 3	orthogonal sets (6.2) **[HW 12 Due (5.2)]**
16	29	Tue, Apr 8	Gram-Schmidt orthogonalization (6.4)
	30	Thu, Apr 10	review for final **[Project due]**
17		**Mon, May 2**	**Final exam (1:00–3:00 pm)**