Math 227 Syllabus, Fall 2007

Prerequisite Information: The prerequisite is MATH 114, 116, or 121.

Text: Linear Algebra and Its Applications, by David Lay, 3rd edition.

Note: 1. The outline may change as the course proceeds. Check this link frequently for homework assignments.

2. There will a weekly quiz every Wed. Tentatively all the quizzes will account for 22% of the overall grade.

Section	Topic	Homework	Date
1.1	Systems of linear equations	p.11: 3, 5, 9, 13, 17, 25	8/27, 8/29
1.2	Row reduction and echelon form	p.25: 1, 3, 7, 1, 15, 17, 19	8/29, 8/31
1.3	Vector equations	p.37: 1, 5, 7, 9, 11, 13, 17, 21, 25 , 32	8/31, 9/5
1.4	The matrix equation Ax=b	p.47: 3, 5, 9, 13, 17, 21, 23	9/7
1.5	Solution sets of linear systems	p.55: 1, 3, 9, 13, 19, 23	9/7
1.6	Applications of linear systems	p.63: 5, 11	9/7, 9/10
1.7	Linear independence	p.71: 3, 5, 9, 13, 21, 22, 27, 28	9/10, 9/12

1.8	Introduction to linear transformation	p.79: 1, 5, 7, 11, 15, 19, 21, 33	9/12, 9/14
1.9	The matrix of a linear transformation	p.91: 1, 5, 11, 15, 17, 21, 23	9/17, 9/19
2.1	Matrix operations	p.116: 3, 7, 8, 9, 17, 18, 22, 27	9/21
2.2	The inverse of a matrix	p.126: 1, 5, 7, 9, 13, 21, 31, 35 (23, 24 will be done in class)	9/24, 9/26
2.3	Characterizations of invertible matrices	p.132: 3, 5, 11, 12, 15, 17, 27, 28, 33	9/26
2.4	Partitioned matrices	p.139: 3, 7, 21 practice problems: 1	9/28
2.5	Matrix factorization	p.149: 1, 9, 11	10/1, 10/3
3.1	Introduction to determinants	p.190: 1, 13, 19, 20, 22, 37	10/3, 10/5
	Review		10/8
	Exam I		10/10
3.2	Properties of determinants	p.199: 1, 3, 5, 9. 11, 18, 19, 25, 29, 34, 39	10/12
3.3	Cramer's rule, volume and linear transformation	p.209: 1, 5, 7, 15, 17, 21, 23, 31	10/15, 10/17
4.1	Vector spaces and subspaces	p.223: 1, 3, 5, 7, 8, 11, 13, 15, 16, 19, 33, 34	10/17, 10/19

4.2	Null spaces, column spaces and linear transformation	p. 234: 1, 3, 5, 9, 15, 17, 23, 25, 31	10/22
4.3	Linear independent sets; bases	p.243: 3, 7, 13, 15, 21, 23, 24, 25, 29, 30	10/24, 10/26. 10/29
4.4	Coordinate systems	p.253: 3, 7, 9, 13, 17, 25, 29	10/31, 11/2
4.5	Dimension of a vector space	p.260: 3, 5, 7, 13, 19, 21	11/5. 11/7
4.6	Rank	p.269: 1, 3, 5, 9, 13, 17, 21, 28	11/9
5.1	Eigenvectors and eigenvalues	p.308: 3, 7, 11, 15, 17, 20, 21, 22b, e, 25	11/9, 11/12
5.2	Characteristic equation	p.311: 7, 11, 13, 21, 25	11/12
5.3	Diagonalization	p.325: 1, 5, 7, 11, 15, 21, 27	11/14, 11/26
5.5	Complex eigenvalues	p.341: 1, 3, 5, 23, 24	11/26
	Review		11/28
	Exam II		11/30
5.5	Complex eigenvalues		12/2
	Review		12/4
4.7	Change of basis	p.276: 1, 3, 5, 9, 13	

