CLASS TIME: MWF 10:00 – 10:50 in Addams Hall 220 from 08/21/2000 to 12/01/2000.

INSTRUCTOR: Jan Verschelde, Office: 728 SEO, Phone: 312 996 4609.
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OFFICE HOURS: On Mon 5PM, Wed 4PM, Fri 3PM, I am sure to be in my office; but feel free to stop by if you have any math questions. We can also make an appointment.

TEXT BOOK: Steven J. Leon: 'Linear Algebra with Applications', Fifth Edition, Prentice Hall, 1998. Bring your text book to every class meeting.

MATH 310 SITE: See http://www.math.uic.edu/math310/ for sample exams, etc...

HOMEWORK: Selected homework problems are assigned with each lecture, but it is recommended that you try all homework problems.

QUIZZES: There will be a quiz every Friday, except on exam days. Every quiz is worth 10 points. There will be no makeup quizzes. If you miss a quiz or if your performance is bad, you can turn in the assigned homework to regain some of the points lost.

EXAMS: During the semester, there will be three exams worth 100 points each. There will be no makeup exams given. The final exam counts for 200 points. If an exam is missed, then greater weight will be placed on the final exam, especially on the material covered on the missing exam.

CALCULATORS: No calculators are allowed during quizzes and exams.

MATLAB: You are encouraged to use MATLAB for making the homework and to gain some computational experiences.

GRADING SCALE:

90 – 100% = A, 80 – 89% = B, 70 – 79% = C, 60 – 69% = D, 0 – 59% = E.

Your course grade is based on a total of 600 points: 300 from the exams during the semester, 200 from the final and 100 from the quizzes.

CLASS ATTENDANCE: Students are expected to attend all class meetings. Any changes in this syllabus or in the scheduling of exams and other assignments will be announced during class meetings.

SOME IMPORTANT DATES:

Friday, September 1 : last day to drop the class.
Monday, September 4 : Labor Day.
November 23–24 : Thanksgiving.
December 4–8 : Final examinations.

COURSE OUTLINE and HOMEWORK ASSIGNMENTS – subject to minor changes :

L-1	Mon Aug 21	1.1	linear systems and row operations – 1ab,5,6ad
L-2	Wed Aug 23	1.2	echelon form – 1,2a-d,3
L-3	Fri Aug 25	1.2	Gauss elimination, Gauss-Jordan – 5a-d,6ab (p.78:2b),12,16,18,19
L-4	Mon Aug 28	1.3	matrix algebra – 2,10,12,28,30 (p.80:6)
L-5	Wed Aug 30	1.4	elementary matrices – 1,3,5
L-6	Fri Sep 1	1.4	LU factorization – 6,7 (Sec 7.2:1,2),8,9a-f,11
	Mon Sep 4	**Labor Day – no classes**	
L-7	Wed Sep 6	2.1	determinants, definition, cofactors – 3,4,6
L-8	Fri Sep 8	2.2	properties of determinants – 1,3,7,10 (p.105:1a-d)
L-9	Mon Sep 11	2.3	Cramer's rule – 1ac,2abc
L-10	Wed Sep 13	Review of Chapters 1 and 2	
L-11	Fri Sep 15	**Exam 1 on Chapters 1 and 2**	
L-12	Mon Sep 18	3.1	vector spaces, definition and examples – 3,4,5,6(laws A1-A3)
L-13	Wed Sep 20	3.2	subspaces – 1ab,2ab,3abc,4,5abc,8ab
L-14	Fri Sep 22	3.2	span and spanning sets – 9ac,10abc,11,13,14
L-15	Mon Sep 25	3.3	linear independence – 1abc,2abc,4
L-16	Wed Sep 27	3.3	continued – 6ab,7abc,8,9,10
L-17	Fri Sep 29	3.4	basis of vector space – 3,5,7,8,10
L-18	Mon Oct 2	3.4	dimension of vector space – 11,12abd,14ab,16
L-19	Wed Oct 4	3.5	change of basis – 1a,2a,3a,4
L-20	Fri Oct 6	3.5	continued – 5,6,9 (p.161:1ab)
L-21	Mon Oct 9	3.6	row and column space – 1ab,2ab,3,4cd,8
L-22	Wed Oct 11	Review of Chapter 3	
L-23	Fri Oct 13	**Exam 2 on Chapter 3**	
L-24	Mon Oct 16	4.1	linear transformations – 5ac,6ab,7bc,8ac,10ac,16
L-25	Wed Oct 18	4.2	matrix representation – 2ab,3ab,4ab,12,13,16 (p.194:1)
L-26	Fri Oct 20	4.3	similarity – 1ab,2ab,4,5abc,6
L-27	Mon Oct 23	5.1,5.2	scalar product; orthog. subspaces – 5.1: 1ab,3ab (p.274:1); 5.2: 1ab,2,3b,4
L-28	Wed Oct 25	5.3	inner products – 3,4ab,7,8,9
L-29	Fri Oct 27	5.4	least squares problems – 1,2,3a,4a
L-30	Mon Oct 30	5.4	continued – 5,6 (p.275:3)
L-31	Wed Nov 1	5.5	orthonormal sets – 1,2,3,7
L-32	Fri Nov 3	5.5	continued – 18,19,24
L-33	Mon Nov 6	5.6	Gram-Schmidt orthogonalization – 1,3,4
L-34	Wed Nov 8	5.6	QR factorization – 1,2,11,15
L-35	Fri Nov 10	6.1	eigenvalues and eigenvectors – 1abcfghijl (p.359:1)
L-36	Mon Nov 13	6.2	linear differential equations – 1ab,2ab,4,5a,6a
L-37	Wed Nov 15	Review of Chapters 4 and 5	
L-38	Fri Nov 17	**Exam 3 on Chapters 4 and 5**	
L-39	Mon Nov 20	6.3	diagonalization; Markov chains – 1abde,2ab,3ab,8ab,19,20,24ab (p.362:8)
L-40	Wed Nov 22	6.4	Hermitian matrices – 1a,2,4ace,5abdef
	Fri Nov 24	**Thanksgiving – no classes**	
L-41	Mon Nov 27	6.5	quadratic forms – 1ab,6acef
L-42	Wed Nov 29	6.6	positive definite matrices – 1ac,4ac,5a (p.363:11)
L-43	Fri Dec 1	Review of all course materials	

December 4-8 – Final Exam – time and room to be announced.