Syllabus for 18.06 Linear Algebra, Spring 2008

MWF 11–12 Room 54-100

The three midterm exams will be held in Walker during lecture hours: closed book. All grading is by your recitation instructor!

W	2/6	The Geometry of Linear Equations	1.1–2.1
F	2/8	Elimination with Matrices	2.2–2.3
M	2/11	Matrix Operations and Inverses	2.4–2.5
W	2/13	LU and LDU Factorization	2.6
F	2/15	Transposes and Permutations	2.7
T	2/19	Vector Spaces and Subspaces	3.1
W	2/20	The Nullspace: Solving $Ax = 0$	3.2
F	2/22	Rectangular $PA = LU$ and $Ax = b$	3.3–3.4
M	2/25	Row Reduced Echelon Form	3.3–3.4
W	2/27	Basis and Dimension	3.5
F	2/29	The Four Fundamental Subspaces	3.6
M	**3/3**	**Exam 1: Chapters 1 to 3.4**	
W	3/5	Graphs and Networks	8.2
F	3/7	Orthogonality	4.1
M	3/10	Projections and Subspaces	4.2
W	3/12	Least Squares Approximations	4.3
F	3/14	Gram-Schmidt and $A = QR$	4.4
M	3/17	Properties of Determinants	5.1
W	3/19	Formulas for Determinants	5.2
F	3/21	Applications of Determinants	5.3
M-F	3/24-28	HOLIDAY	
M	3/31	Eigenvalues and Eigenvectors	6.1
W	**4/2**	**Exam 2: Chapters 1–5, 8.2**	
F	4/4	Diagonalization	6.2
M	4/7	Markov Matrices	8.3
W	4/9	Fourier Series, FFT, Complex Matrices	8.5, 10.2–10.3
F	4/11	Differential Equations	6.3
M	4/14	Symmetric Matrices	6.4
W	4/16	Positive Definite Matrices	6.5
F	4/18	Matrices in Engineering	8.1
M	4/21	HOLIDAY	
W	4/23	Similar Matrices	6.6
F	4/25	Singular Value Decomposition	6.7
M	4/28	Linear Transformations	7.1–7.2
W	4/30	Exam Review	
F	**5/2**	**Exam 3: Chapters 1–8 (8.1, 2, 3, 5)**	
M	5/5	Choice of Basis	7.3–7.4
W	5/7	Linear Programming	8.4
F	5/9	*Course Review*	
M	5/12	Numerical Linear Algebra	9.1–9.3
W	5/14	Computational Science	18.085
M-F	**5/19-23**	**Final Exams**	