Syllabus for 18.06 Linear Algebra, Spring 2003

The two midterm exams will be held in Walker 50-340 during lecture hours: closed book

Day	Date	Topic	§ of book
W	Feb 5	Vectors and Linear Equations	1.1–2.1
F	Feb 7	Elimination with Matrices	2.2–2.3
M	Feb 10	Matrix Operations and Inverses	2.4–2.5
W	Feb 12	LU and LDU Factorization	2.6
F	Feb 14	Transposes and Permutations	2.7
T=M	Feb 18	Vector Spaces and Subspaces	3.1
W	Feb 19	The Nullspace: Solving $Ax = 0$	3.2
F	Feb 21	Rectangular $PA = LU$ and $Ax = b$	3.3–3.4
M	Feb 24	Row Reduced Echelon Form	3.3–3.4
W	Feb 26	Basis and dimension	3.5
F	Feb 28	Review	1.1–3.5
M	Mar 3	**Exam 1: 1.1–3.5**	
W	Mar 5	The Four Fundamental Subspaces	3.6
F	Mar 7	Orthogonality	4.1
M	Mar 10	Projections and Subspaces	4.2
W	Mar 12	Least squares approximation	4.3
F	Mar 14	Gram-Schmidt	4.4
M	Mar 17	Properties of Determinants	5.1
W	Mar 19	Formulas for Determinants	5.2
F	Mar 21	Cramer's rule and other applications	5.3
M	Mar 31	Additional material on Determinants	5.1–5.3
W	Apr 2	Introduction to Eigenvalues	6.1
F	Apr 4	Diagonalizing a Matrix	6.2
M	Apr 7	Review	1.1–6.2
W	Apr 9	**Exam 2: 1.1–6.2**	
F	Apr 11	Markov Matrices	8.2
M	Apr 14	Differential Equations	6.3
W	Apr 16	Symmetric matrices	6.4
F	Apr 18	Positive definite matrices	6.5
W	Apr 23	Similar matrices	6.6
F	Apr 25	Singular Value Decomposition	6.7
M	Apr 28	Linear Transformations	7.1
W	Apr 30	The matrix of a linear Transformation	7.2
F	May 2	Change of basis	7.3
M	May 5	Selected material from 7.4	7.4
W	May 7	Fourier Transform	8.4/10.2
F	May 9	Fast Fourier Transform	10.3
M	May 12	Jordan Normal Form	6.6
W	May 14	Final Review	
M-F	**May 19-23**	**Final Exams**	