

MATH 255 Syllabus
Linear Algebra with Applications, Gareth Williams, 5th edition

Time	Section	Suggested Problems
1	1.1 Matrices and systems of linear equations	5, 6, 7, 10, 11, 12, 13
1	1.2 Gauss-Jordan elimination	2, 3, 6, 7, 10, 13
1	2.1 Operations on matrices	5, 10, 13, 14, 15, 16, 19, 20
0.5	2.2 Properties of matrix operations	1, 5, 7, 8, 9, 10, 19, 20, 23, 24, 28
0.5	2.3 Symmetric matrices	1, 2, 5, 10, 11, 12, 13
1	2.4 Inverse of a matrix	2, 4, 7, 9, 11, 14, 15, 18, 19, 22, 24, 25, 26
1	3.1 Introduction to determinants	4, 7, 8, 10, 11, 13, 14, 15
1	3.2 Properties of determinant	2, 3, 5, 7, 9, 11, 15, 16, 19
0.5	3.3 Numerical evaluation of determinants	4, 6, 11, 12, 14
1	3.4 Determinants, matrix inverses, and systems of linear equations	4, 7, 10, 14, 15, 17, 19, 20, 21, 22, 26
0.5	4.1 The vector space \mathbb{R}^n	3, 4, 7, 10, 12
1	4.2 Dot product, norm, angle, and distance	2, 4, 6, 10, 13, 14, 16, 19, 20, 22, 30, 32
1	4.4 Subspaces of \mathbb{R}^n	2, 4, 5, 8, 10, 11, 12
1	4.5 Linear combinations of vectors	3, 5, 7, 8, 9, 11, 18
1	4.6 Linear dependence and independence	2, 4, 5, 7, 8, 9
1	4.7 Basis and dimension	3, 4, 5, 6, 7, 8, 11, 13, 14, 15, 16
1	4.8 Rank of a matrix	2, 5, 6, 7, 8, 9, 11, 12, 14, 15
1.5	4.9 Orthonormal vectors and projections in \mathbb{R}^n	2, 3, 4, 6, 7, 8, 9, 10, 14, 16, 17, 18
0.5	6.4 Solutions of homogeneous and non-homogeneous systems	1, 3, 5, 6, 10, 11 + supplementary problems from handout

TOTAL: 17 periods of lectures + 3 periods for tests and review; 1 period=75-minute lecture.

* Omit projection onto a subspace.

Revised 12/15/04