BRONX COMMUNITY COLLEGE
of the City University of New York

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

Math 42 Syllabus – Linear Algebra (4 credits – 4 hours per week)
Prerequisite: MTH 32 (Calculus II) or the equivalent

TEXT: Elementary Linear Algebra (Applications Version), 9th Edtn. H. Anton, C. Rorres, Wiley 2005

Section	Topic	page	Suggested Exercises
1.1	Introduction to systems of linear equations	6	1,4,5,7,10,11-13
1.2	Gaussian elimination	19	1,3,4,6,10,12,17,18,22,25,26,31,32
1.3	Matrices and matrix operations	34	1,3,5,6,7,12,15,16,17,20,22,27-30
1.4	Inverses; rules of matrix arithmetic	48	1,3,5,6,7,14-17,29,31,35
1.5	Elementary matrices and a method for finding A^{-1}	57	1-6,19,20
1.6	Further results on systems of equations, invertibility	66	1,5,11
2.1	Determinants by cofactor expansion	94	1-4,11,12,15
2.2	Evaluating determinants by row reduction	101	1,3,5,9
2.3	Properties of the determinant function	109	2,4,5,12,16,18,20-23
2.4	A combinatorial approach to determinants	117	1,2,4,5,7,10,17
4.1	Euclidean n-space	178	1,3,4,5,8-11,14-17,23,37
4.2	Linear transformations from R^n to R^m	193	2,3,5,6,9,12,15,17,19,21
4.3	Properties of linear transformations from R^n to R^m	206	1,3,5,8-11,13,15,21,22,25
5.1	Real vector spaces	226	1-12,25
5.2	Subspaces	238	1,3-9,11,14,15,23
5.3	Linear independence	248	1,2,3,7,9,15,24
5.4	Basis and dimension	263	1-4,7-9,11,13,15,17
5.5	Row space, column space, and null space	276	1,2,3,5,6,9,11,15
5.6	Rank and nullity	288	1,2,4,7,13,17
7.1	Eigenvalues and eigenvectors	367	1-6,11,16,20,24
7.2	Diagonalization	378	1,2,3,5,9,11,13,19,20,25
8.1	General linear transformations	398	1,3-10,13,15,17,19,31,33
8.2	Kernel and range	405	1,3,5,7,8,11,12,16,17,21,25
8.3	Inverse linear transformations	413	1-4,7,9,12,13,22
8.4	Matrices of general linear transformations	426	1,3,5,6,9,13,16
8.5	Similarity	439	1,3,5,11,12,19

C O'S (8/07)