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), 10th Edtn. H. Anton, C. Rorres, Wiley 2010

Section	Topic	page	Suggested Exercises
1.1	Introduction to systems of linear equations	9	2,4,6,7,9,11-13
1.2	Gaussian elimination	22	1-7,3-15,21,25,37
1.3	Matrices and matrix operations	35	1,3,5,6,7,12,15,16,17,20,22,27-30
1.4	Inverses; rules of matrix arithmetic	49	1,3,5,6,7,14-17,29, 35
1.5	Elementary matrices and a method for finding A^{-1}	58	1-5,9,13,15,19,20
1.6	Further results on systems of equations, invertibility	65	1,3,5,10,13,15,16
2.1	Determinants by cofactor expansion	98	1-4,19,25,29,38
2.2	Evaluating determinants by row reduction	104	1,3,5,9,10,13,15
2.3	Properties of the determinant function	115	5,7,9,14,15,17
4.1	Real vector spaces	178	3-14
4.2	Subspaces	188	1-5, 7-12, 17
4.3	Linear independence	199	1-4, 7,9,15
4.4	Coordinates and basis	207	1-5, 7-11
4.5	Dimension	216	1,3,5,8,9,12,14,20
4.6	Change of basis	222	1-8
4.7	Row space, column space, and null space	235	1-6,11,12,16
4.8	Rank and nullity	246	1-5,7,9,13,17,18
4.9	Matrix transformations from R^n to R^m	260	1,3,5,7,8,14,15,16
4.10	Properties of matrix transformations	271	1,3,5,11
5.1	Eigenvalues and eigenvectors	303	1-7,13,16,18,19,28
5.2	Diagonalization	313	3,5,6,7,9,11,13,15,17,23,24
8.1	General linear transformations	443	1-11, 14,16,18,20,21,23,25,29,41
8.2	Isomorphism	451	1-7
8.3	Composition and inverse linear transformations	457	1,2,5,6,11,13,15
8.4	Matrices of general linear transformations	466	1,3,5,6,7,9,13,16
8.5	Similarity	473	1,3,5,11,12

AW (3/11)