DEPARTMENT OF MATHEMATICS
COLLEGE OF STATEN ISLAND

MTH 338 LINEAR ALGEBRA

8/2014 JC

Text: Introduction to Linear Algebra , Gilbert Strang (4th edition)
Publisher: Wellesley-Cambridge Press, 2009, ISBN: 978-0-9802327-1-4
MIT OpenCourseWare: http://web.mit.edu/18.06 On this website there are videos by Gilbert Strang, sample exams and solutions, and problem sets
Website for the textbook: http://math.mit.edu/linearalgebra

Note: Each lesson is a 2 hour class period

Date	Lesson	Section	Topic	Exercises
8/28	1	1.1 1.2	Vectors and Linear Combinations Lengths and Dot Products	p. 8: 2,4,6,9,10,17,26 p. 19: 1,3,4,6,8,9,12,19,21
9/2	2	1.3 2.1	Matrices Vectors and Linear Equations	p. 29: 1,2,4,5,7 p. 40: 4,5,6,7,9,10,13,18,27
9/4	3	2.2	The Idea of Elimination	p. 51: 1,2,4,5,11,12,13
9/9	4	2.3	Elimination Using Matrices	p. 63: 1,3,4,8,11,14,18,25,27,28
9/11	5	2.4	Rules for Matrix Operations	p. 75: 1,3,5,6,7,12,13,14,16,18,27,32 Quiz 1 due 9/16
9/16	6	2.5	Inverse Matrices	p. 89: 1,4,6,7,8,11,1516,21,22,24,27
9/18	7	2.6	Elimination = Factorization: A=LU	p. 102: 1,2,3,4,6,9,12,15 Quiz 1 due 9/30
9/30	8	2.6		
10/2	9		Exam 1	
10/7	10	2.7	Transposes and Permutations	p.115: 2,4,8,16,17,20,22*
10/9	11	3.1	Spaces of Vectors	p. 127: 1,3,5,9,11,15,19,20,23,25
10/14	12	3.2	The Nullspace of A: Solving Ax=0	p. 140: 1,2,3,4,5,6,9,10,13,14,16,24(impossible),26
10/16	13	3.3	The Rank and the Row Reduced Form	p. 151: 1,2,7,8,9
10/21	14	3.4	The Complete Solution to Ax=b	p. 163: 1,2,4,6,8,12,13,14,16,18,25
10/23	15	3.5	Independence, Basis and Dimension	p. 178: 1,2,3,6,8,9,11,12,15,18,20,25
10/28	16	3.6	Dimensions of the Four Subspaces	p. 190:1,2,4,6,9,11,12,16,24 Quiz 2 due 10/30

10/30	17	3.6		
11/4	18		Exam 2	
11/6	19	4.1	Orthogonality of the Four Subspaces	p. 202: 1,3,5,6,8,9,10,11,12,16,28
11/11	20	4.2	Projections	p. 214: 1,3,8,9,11,13,17,21,24,29
11/13	21	4.3 4.4	Least Squares Approximations Orthogonal Bases and Gram-Schmidt	p. 226: 1,2,17,18,21
11/18	22	5.1	The Properties of Determinants	p. 251: 1,3,8,9,10,11,14,23,24,27,28
11/20	23	5.3	Cramer's Rule, Inverses, and Volumes	p. 279: 2,3,16,17 Quiz 3 due 11/25
11/25	24	5.3		
12/2	25		Exam 3	
12/4	26	6.1	Introduction to Eigenvalues	p. 293: 1,3,5,6,8,16,17,21,23,27
12/9	27	6.2	Diagonalizing a Matrix	p.307: 1,3,4,6,11,12,13,14,15,21,26 Quiz 4 due 12/11
12/11	28			
12/16			FINAL EXAM	