DEPARTMENT OF MATHEMATICS
COLLEGE OF STATEN ISLAND

MTH 338 LINEAR ALGEBRA

5/2017 ACP

Text: <u>Introduction to Linear Algebra</u> , Gilbert Strang (5th 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: 1,3,4,6,8,9,12,19,21,29
9/2	2	1.3 2.1	Matrices Vectors and Linear Equations	p. 29: 1,2,4,5,7 p. 41: 4,5,6,7,9,10,13,18,27
9/4	3	2.2	The Idea of Elimination	p. 53: 1,2,4,5,11,12,13
9/9	4	2.3	Elimination Using Matrices	p. 66: 1,3,4,8,11,14,18,25,27,28
9/11	5	2.4	Rules for Matrix Operations	p. 77: 1,3,5,7,13,14,15,17,19,27 Quiz 1
9/16	6	2.5	Inverse Matrices	p. 92: 1,4,6,7,8,11,15,16,21,22,24,27
9/18	7	2.6	Elimination = Factorization: A=LU	p. 104: 1,2,3,4,6,9,12,15 Quiz 2
10/2	8		Exam 1	
10/7	9	2.7	Transposes and Permutations	p.117: 2,4,8,16,17,20,22*
10/9	10	3.1	Spaces of Vectors	p. 131: 1,3,5,9,11,15,19,20,23,25
10/14	11	3.2	The Nullspace of A: Solving Ax=0	p. 142: 1,2,3,5,8,9,11,13,14,16,24,29
10/21	12	3.3	The Complete Solution to Ax=b	p. 158: 1,2,4,6,8,12,13,14,16,18,25
10/23	13	3.4	Independence, Basis and Dimension	p. 175: 1,2,3,6,8,9,11,12,15,18,20,25
10/28	14	3.5	Dimensions of the Four Subspaces	p. 190:1,2,4,6,9,11,12,16,24 Quiz 2
11/4	15		Exam 2	
11/6	16	4.1	Orthogonality of the Four Subspaces	p. 202: 1,3,5,6,8,9,10,11,12,16,28

11/11	17	4.2	Projections	p. 214: 1,3,8,9,11,13,17,21,24,29
11/13	18	4.3	Least Squares	p. 229: 1,2,3,4,5,8,12
11/15	19	4.4	Orthogonal Bases and Gram-Schmidt	p. 242: 1,2,4,5,21
11/18	20	5.1	The Properties of Determinants	p. 254: 1,3,8,9,10,11,14,23,24,27,28
11/20	21	5.3	Cramer's Rule, Inverses, and Volumes	p. 283: 2,3,16,17 Quiz 3 due 11/25
11/25	22		Review for Exam 3	Lessons 16 through 21
12/2	23		Exam 3	
12/4	24	6.1	Introduction to Eigenvalues	p. 298: 1,3,5,6,8,16,17,21,23,27
12/9	25	6.2	Diagonalizing a Matrix	p. 314: 1,3,4,6,11,12,13,14,15,21,26 Quiz 4
12/10	26	8.1	Linear Transformations	p.407: 1,3,6,10,12
12/11	27	8.2	Matrix of Linear Transformations	p. 418: 5,6,7,10,11,14,15,16
12/12	28		Review for Final	
12/16			FINAL EXAM	