Information
Math 338

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Time and Place Monday, Wednesday : 4:40–6:20pm, 2M-205

Office hours Monday: 3:40–4:30pm,
Wednesday: 3:40–4:30pm, 8:10–8:50pm.

Textbook Introduction to Linear Algebra, by *Strang (5th Edition)*
Wellesley-Cambridge Press & Co. (2016)
ISBN: 978-0-9802327-7-6
(**The book is mandatory**)

Course Outline This course aims to study linear systems, and develop a theory to understand the structure of the solutions. To reach this goal, we will introduce the concepts of matrix, vector space and of linear maps.

Course Grade The final course grade is determined as follows:

Homework	5%	**Test 1**	10%	**Final**	40%
		Test 2	20%		
		Test 3	25%		

Homework The HW must be submitted using "Webwork" that can be found on the mathematics Website of CSI. Go to `http://www.math.csi.cuny.edu/` and follow the links.

Tests September 29th, October 27th, December 1st
Final: Expected to be December 17th (but refer to the official CSI calendar)
The material for the tests is cumulative

Integrity policy Like any university and any research institute, CUNY has an academic integrity code. Students are required to be honest and ethical for any academic assignments.

Cell phone Let us stay focused on the class !
Thus, cell phone must be switched off. No phone during my lectures.

Lesson Plan
Below, each lesson corresponds to a 100 minutes class.
There will be a break of 5 minutes after 50 minutes.
Some classes will start with a 10 minutes presentation done by one student on some assigned topics.

Lesson	Sections	Topics	Homework
1	1.1, 1.2	Vectors, Linear combinations, Dot Products	p.8, p.17
2	1.3, 2.1	Matrices, Linear equations	p.29, p.40
3	2.2, 2.3	Gauss Elimination, Elimination using matrices	p.52, p. 64
4	2.4	Matrix operations	p.76
5		Row Echelon Form Reduced Row Echelon Form	
6	2.5	Inverse matrices	p.90
7		**Exam 1** (Monday September 29th)	
8	2.6	Factorization A=LU	p.102
9	2.7	Transpose, permutations	p.115
10	3.1	Vector spaces, Null Space	p.128, p.140
11	3.3	Rank and solutions to AX = b	p.155
12	3.4	Independence	p.174
13	3.4	basis, dimension	p.174
14	3.4	**Exam 2** (Monday, October 27th)	p.174
15	3.5	Dimension of the four subspaces	p.189
16	4.1	Orthogonality of the four subspaces	p.200
17	4.2	Projections	p.214
18	4.3	Least squares approximations	p.227
19	4.4	Orthogonal Bases and Gram-Schmidt	p.240
20	5.1	Determinants	p.252
21	5.2	Permutation and cofactors	p.264
22	5.2	Permutation and cofactors	p.264
23	6.1	Eigenvalues	p.295
24		**Exam 3** (December 1st)	
25	6.2	Diagonalizing a matrix	p.311
26	6.4	Symmetric matrices	p.343
27	6.5	positive definite matrices	p.357
28	8.1, 8.2	Linear Transformations (Last Day of Class December 15th)	p.406 and p.417

You must to do as much as possible HW from the book.
The page indicated above gives only the first page of the problems related to the section covered.
The HW on Webwork must be submitted every Sunday.