

Information

Math 338

Professor	Marcello Lucia Office 1S-226, marcello.lucia@csi.cuny.edu http://www.math.csi.cuny.edu/~mlucia/										
Time and Place	Monday: 6:30–8:20pm, 1S-102 Wednesday: 6:40–8:20pm, 1S-102 Office hours: Monday: 3:30–4:20 pm and 8:20–9:00pm Wednesday: 3:30–4:20 pm.										
Textbook	<i>Gilbert Strang</i> , LINEAR ALGEBRA AND ITS APPLICATIONS (4T EDITION), Brooks Cole Inc (2006) ISBN-13: 978-0-03-010567-8 MIT OpenCourseWare http://ocw.mit.edu/courses/mathematics/18-06sc-linear-algebra-fall-2011										
Course Outline	This course aims to learn basic facts about solving equations, the matrix formalism. The important notion of vector space that is fundamental in mathematics will be studied in details.										
Course Grade	The final course grade is determined as follows: <table><tr><td>Homework</td><td>10%</td></tr><tr><td>Quizz</td><td>10%</td></tr><tr><td>First test</td><td>20%</td></tr><tr><td>Second test</td><td>20%</td></tr><tr><td>Final</td><td>40%</td></tr></table> <p><i>First test:</i> October 9 <i>Second Test:</i> November 13 <i>Final:</i> December 16 (to be confirmed)</p>	Homework	10%	Quizz	10%	First test	20%	Second test	20%	Final	40%
Homework	10%										
Quizz	10%										
First test	20%										
Second test	20%										
Final	40%										
Integrity policy	Please refer to http://www.cuny.edu/about/info/policies/academic-integrity.pdf										
Cell phone	Let us stay focused on the class ! Thus, cell phone should be switched off.										
Lesson Plans	Below, each lesson corresponds to a two-hour class										

Lesson	Sections	Topics	Homework
1	1.1 & 1.2	Geometry of Linear Equations	p.9: 1, 2, 3, 4, 8, 9, 11
2	1.3	Gaussian Elimination	p.15: 1, 2, 3, 5, 10, 17, 20, 28
3	1.4 & 1.5	Matrix notation	p.26: 1, 3, 4, 7, 10, 17, 22, 32
4	1.5	Triangular factors, Row exchanges	p.39: 3, 4, 11, 13, 29
5	1.6	Inverses and transposes	p.52: 1, 6, 7, 8, 10, 11, 18, p.52: 25, 38, 40, 41, 49, 50, 53
6	1.7	Special matrices and applications	p. 63: 1, 2, 3
7	2.1	Vector spaces and subspaces	p.73: 1, 2, 5, 8, 14, 17, 18, 22, 28
8	2.2	Solving $Ax = 0$, $Ax = b$	p.85: 1, 2, 3, 5, 7, 12, 19, 33, 35, 53
9	2.3	Linear Independence, Basis, Dimension	p.98: 1, 2, 6, 11, 13, 16, 20, 32, 37, 44
10	2.4	Subspaces	p.110: 1, 2, 3, 12, 22, 29
11		Exam 1 (October 9)	
12	2.5	Graphs & networks	p.122: 1, 6, 10, 17
13	2.6	Linear Transformations	p. 133: 1, 2, 3, 4, 6, 21, 22, 28, 36
14	3.1	Orthogonal vectors	p. 148: 1, 2, 5, 6, 7, 21, 22
15	3.2	Projections and least squares	p. 157: 1, 12, 17, 21
	3.3	Least squares	p. 170: 1, 3, 12, 13
16	3.4	Orthogonal Bases & Gram-Schmidt	p. 185: 1, 6, 13, 16, 17, 31
17	4.1 & 4.2	Determinants	p. 206: 1, 2, 4, 10, 14, 15, 22, 25
18	4.3	Formulas for the determinants	p. 215: 1, 2, 3, 7
	4.4	Applications of the determinants	p. 225: 1, 13, 14, 27, 28
19	5.1	Eigenvalues	p. 240: 1, 2, 3, 5, 7, 10, 11, 14, 20, 21
20		Review	
21		Exam 2 (November 13th)	
23		Correction of the exam	
24	5.2	Diagonalization of a matrix	p. 250: 1, 2, 3, 5, 7
25	5.3	Applications	p. 262: 2, 8, 9, 12, 18
26		No Class (December 2)	
27	5.6	Similarity transforms	p. 302: 1, 2, 3, 8, 12, 16, 31
28		Exam preparation (December 11)	