

Linear Algebra I
Math 124 Section 10
Summer 2008

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OFFICE HOURS: M,Tu,W,Thu: 02:30 – 03:30 PM
by appointment (Gov 224)

TEXTBOOK: *Linear Algebra And Its Applications* by David Lay,
3rd Edition, Addison Wesley 2006

GRADING POLICY:

1 Midterm:	30%
N Collected homeworks:	35%
1 Comprehensive Final:	35%
Total:	100%

	Location	Day	Time
Math 124.10	2020 K St, Room 15	M, Tu, W, Th	04:00 - 05:30 PM

- If for some reason you are unable to take an exam at the announced time, you must notify me in advance with an appropriate excuse. Otherwise a zero will be recorded.
- Homework must be handed in on the announced day.
- **Calculators are not allowed on exams.**
- Homework - Selected homework exercises will be collected and graded, but after each lecture, you are strongly encouraged to work as many of the exercises

Topics

(Based on Edition 3, updated 2 June 2008)

Lecture No.	Date	Section	Topic	Homework
1	May 19	1.1	Systems of linear equations	p 11: 7,9, 17-20, 25,29,30,33-34
2	May 20	1.2 1.3	Echelon form Vector equations	p 25: 1,3,6,9,12,15,23-27,31-33 p 37: 1,5,9,11,13,21,25,31,32
3	May 21	1.4 1.5	$Ax = b$ Solution set of linear systems	p 47: 1,3,5,15,17,19,21, 23-25, 29-31, 33 p 55: 3,6,9,...,21; 23-28, 37, 39, 40
4	May 22	1.7 1.8	Linear independence Linear transformations	p 71: 1, 3, 5, ... 19;21-23, 26,30,31,33,36,39 p 79: 3,6,9,12,15,18, 21-22, 24,25, 30, 32, 34
	May 26		Holiday	
5	May 27	1.9 2.1	The matrix of a linear transformation Matrix operations	p 90:3,6,9,12,15,18,23-24, 27,30,31,35 p 116: 2,3,5,7,8,10,12,15,16,17,22, 26-28,33
6	May 28	2.2 2.3	Inverse of a matrix Characterizations of invertible matrices	p 126: 3,6,9, 13,18,19,21-26,31,33 p 132: 11,13,15,18,22,23,27
7	May 29	2.8	Subspaces of R^n	p 173: 6,7,10,11,18,21,22,25
8	Jun 02	2.9 3.1	Dimension and rank Introduction to determinants	p 180: 6,11-13,15-17,20,24,27,28 p 190: 3,19,19-21,25,36,42
9	Jun 03	3.2	Properties of determinant	p 199: 7, 15-19, 21, 24,27,29, 32,33,35,36
10	Jun 04	3.3	Cramer's rule	p 209: 6,8,16,27,29
11	Jun 05	4.1	Vectors spaces and subspaces	p 223: 1, 15,17,19,23, 32
12	Jun 09	4.2	Null spaces, column spaces	p 234: 5,13-15,24, 25, 30,35
13	Jun 10	4.3	Linear independent sets: bases	p. 243: 11,15,19,21,24,26,32,33
14	Jun 11		Midterm Exam (60 min)	
		4.4	Coordinate systems	p 253: 4,14,21,23,27,32
15	Jun 12	4.5 4.6	Dimension of a vector space Rank	p 260: 12,19,21,23,26,27 p 269: 3,6,9,12,15,17,20,27-30
16	Jun 16	4.7	Change of basis	p 276: 1,5,7,9,11, 14
17	Jun 17	5.1	Eigenvalues and eigenvectors	p 308: 4,11,13,19,21,23,25,26,29,31
18	Jun 18	5.2	The characteristic equation	p 317: 3,9,14,18,19,21,23,25
19	Jun 19	5.3	Diagonalization	p 325: 1, 13, 21, 25, 31,32
20	June 23	5.4	Eigenvectors and linear transformations	p 333: 1, 3, 9, 13, 19, 25
21	Jun 24	5.5	Complex eigenvalues	p 340: 1, 13, 23-26
22	Jun 25	5.7	Applications to differential equations	p 360: 1, 5, 7, 9-11
23	Jun 26		Final Comprehensive	

Collected Homework

- HW1** Collected May 22: (1.1) 9; (1.2) 12; (1.3) 25; (1.4) 21.
- HW2** Collected May 29: (1.5) 25, 26; (1.7) 31, 36; (1.8) 25, 34.
- HW3** Collected Jun 02: (1.9) 29, 30; (2.1) 16, 22;
- HW4** Collected June 3: (2.2) 9, 31; (2.3) 15, 27
- HW5** Collected June 5: (2.8) 25, (2.9) 12, 20; (3.1) 42
- HW6** Collected June 16: (4.1) 32; (4.2) 25,35; (4.3) 15, 33; (4.4) 21,32
- HW7** Collected June 19: (4.5) 23, (4.7) 5; (5.1) 25, 29
- HW8** Collected June 24: (5.2) 21, 27 ; (5.3) 19, 21; (5.5) 13

Midterm

Sections

(1.1)-(1.9)
(2.1)-(2.3), (2.8)-(2.9)
(3.1)-(3.3)
(4.1)-(4.2)

Practice Problems

Chapter 1 p 102: 1, 7,8,11,14,18,20
Chapter 2 p 183: 1,3,7,9,10,16,17
Chapter 3 p 209: 1,4,9, 14
(4.1) p 223 1, 15,17,19,23
(4.2) p 234 5, 15,24,25

Final Exam

Sections

(1.1)-(1.9)
(2.1)-(2.3), (2.8)-(2.9)
(3.1)-(3.3)
(4.1)-(4.7)
(5.1)-(5.3), (5.5), (5.7)

Practice Problem

Chapter 1 p 102: 10, 16, 19, 22
Chapter 2 p 183: 1, 6, 11, 13, 16, 23
Chapter 3 p 211: 1, 7, 13-1
Chapter 4 p 298: 1-3, 12, 14
Chapter 5 p 370: 6, 11, 13, 15, 17