

MTH 253 - SYLLABUS

Linear Algebra and Its Applications, 3rd edition by David C. Lay

Hours	Section	Homework Problems	
	1.1	Systems of Linear Equations	1, 4, 6, 7, 10, 11, 14, 16, 17, 22, 23, 24, 33, 34
	1.2	Row Reduction and Echelon Forms	1, 4, 8, 11, 14, 15, 18, 21, 22, 25, 29, 31, 33
	1.3	Vector Equations	1, 4, 5, 7, 10, 12, 15, 17, 18, 26, 27, 28
6	1.4	The Matrix Equation $Ax = b$ $Ax = b$	1, 4, 7, 10, 12, 13, 14, 16, 17, 20, 21, 23, 24, 25, 26
	1.5	Solution Sets of Linear Systems	2, 3, 6, 7, 10, 12, 14, 16, 17, 22, 23, 24
	1.7	Linear Independence	2, 3, 5, 8, 9, 12, 15, 20
	<i>1.10</i>	<i>Linear Models (Application) †</i>	<i>2, 3, 6, 7, 10, 12</i>
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	2.1	Matrix Operations	2, 3, 6, 7, 8, 9, 10, 12, 15, 16, 20, 21, 27, 32
	2.2	The Inverse of a Matrix	3, 6, 7, 9, 10, 13, 15, 18, 21, 30, 32, 34, 37, 39
6	2.7	<i>Computer Graphics (Applications)</i>	<i>3, 4, 6, 7, 11, 14, 15, 17, 18</i>
	2.8	Subspaces of R^n *	1, 3, 5, 7, 10, 13, 15, 18, 20, 23, 26
	2.9	Dimension and Rank*	9, 12, 13
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	3.1	Introduction to Determinants	1, 4, 7, 10, 13, 16, 19, 22, 23, 38, 39, 40
4	3.2	Properties of Determinants	1, 2, 3, 4, 6, 7, 10, 16, 17, 20, 22, 24, 27, 28, 29, 31, 34, 39
	3.3	<i>Cramer's Rule, Volume (Application)</i>	<i>2, 5, 10, 13, 16, 20, 21, 24, 29</i>
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	5.1	Eigenvectors and Eigenvalues	1, 4, 7, 11, 12, 14, 17, 20, 21, 22, 25, 26, 29
	5.2	The Characteristic Equation	2, 5, 8, 9, 14, 15, 16, 19, 21, 22, 24
5	5.3	Diagonalization	2, 3, 6, 8, 11, 14, 18, 21, 22
	5.5	Complex Eigenvalues	2, 5, 8, 9, 14, 15, 22
	5.6	<i>Discrete Dynamical Systems (Application)</i>	<i>1, 2, 3, 4, 5, 6</i>
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	6.1	Inner Product, Length and Orthogonality	1, 4, 6, 9, 10, 14, 15, 18, 19, 22, 25, 27
5	6.2	Orthogonal Sets	2, 5, 12, 13, 14, 20, 28, 29, 30
	6.3	Orthogonal Projections	2, 5, 8, 12, 13, 15, 21, 22
	6.5	<i>Least-Squares Problems (Application)</i>	<i>2, 3, 7, 10, 12</i>

TOTAL: 26 hours + 4 hours for exams, review, etc.

† Italicized sections are optional.

* Instructor may choose to substitute material from Chapter 4.

Revised: 08/27/07