SYLLABUS FOR M20F SYLLABUS Text by Lay Edition 3

Section	Lectures	Topic
1.1	0.5	Systems of Linear Equations
1.2	1	Row Reduction and Echelon Forms
1.3	0.5	Vector Equations
1.4	1	The Matrix Equation $A\mathbf{x} = \mathbf{b}$
1.5	1	Solution Sets of Linear Systems
1.7	1	Linear Independence
1.8	0.5	Introduction to Linear Transformations
1.9	1	The Matrix of a Linear Transformation
2.1	1	Matrix Operations
2.2	1	The Inverse of a Matrix
2.3	0.5	Characterizations of Invertible Matrices
2.5	0.5	Matrix Factorizations
4.1	1	Vector Spaces and Subspaces
4.2	1	Null Spaces, Column Spaces and Linear Transformations
4.3	0.75	Linearly Independent Sets; Bases
4.5	0.75	The Dimension of a Vector Space
4.6	0.5	Rank
4.4	0.5	Coordinate Systems
3.1	0.5	Introduction to Determinants
3.2	1	Properties of Determinants
3.3	0.5	Cramer's Rule; Volume and Linear Transformations
5.1	1	Eigenvectors and Eigenvalues
5.2	1	The Characteristic Equation
5.3	1	Diagonalization
6.1	1	Inner Product, Length and Orthogonality
6.2	0.5	Orthogonal Sets
6.3	1	Orthogonal Projections
6.4	0.5	The Gram-Schmidt Process
6.5	0.5	Least-Squares Problems
7.1	1	Diagonalization of Symmetric Matrices
7.4	1.5	Singular Valued Decomposition
Total	25	Approx total 30 MWFs -- 2 holidays – 2 midterms = 26 Lectures

MATLAB HW ASSIGNMENTS online www.math.ucsd.edu/~math20f

vs Lay's book Edition 3:

1. Introduction
2. Systems of Linear Equations — Lay Ch 1
3. Matrix Algebra and — Lay Ch 2.1-2.3
4. Eigenvalues, Determinants, and Diagonalization — Lay Ch 5.1-5.3
5. Orthogonality and Least Squares — Lay Ch 6.1 -6.5

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