Course Plan of MA-210 Linear Algebra (Spring 2024)

Book: Elementary Linear Algebra, Applications Version by HOWARD ANTON, CHRIS RORRES, ANTON KAUL, 12th Edition, ISBN-13: 978-1-119-40672-3

Ch	Topics	Exercises to be covered with Practice questions from 12th Ed
1	Introduction to Systems of Linear Equations	Ex 1.1 (1-14)
	Matrices and Matrix Operations	Ex 1.3 (1-8,11-16)
	Gaussian Elimination	Ex 1.2 (1-22)
	Inverses; Algebraic Properties of Matrices	Ex 1.4 (1-20)
	Elementary Matrices and a Method for Finding inverse A^{-1}	Ex 1.5 (9-26)
	More on Linear Systems and Invertible Matrices	Ex 1.6 (13-17)
	Diagonal, Triangular, and Symmetric Matrices	Ex 1.7 (7-10)
	Applications of Linear Systems	Ex 1.10 (1-8)
2	Evaluating determinants by	Ex 2.1 (1-26)
	_i)_ Cofactor expansion	
	_ii)_ row reduction	Ex 2.2 (1-14)
3	Vector in plane	Ex 3.1 (1-20)
	Norm and Dot product of Vectors	Ex 3.2 (1-16)
	Orthogonality	Ex 3.3 (1-34)
	MID TERM EXAM	
4	Real Vector Spaces	Ex 4.1 (1-12)
	Subspaces	Ex 4.2 (1-16)
	Spanning Sets	Ex 4.3 (1-10)
	Linear Independence	Ex 4.4 (1-14)
	Coordinates and Basis	Ex 4.5 (1-18)
	Dimension	Ex 4.6 (1-6)
	Rank, Nullity, and the Fundamental Matrix Spaces	Ex 4.9 (1,2)
5	Eigenvalues and Eigenvectors	Ex 5.1 (1-12)
	Diagonalization	Ex 5.2 (5-20)
	Dynamical Systems and Markov Chains	Ex 5.5 (1-12)
6	Inner Products	Ex 6.1 (1-26)
	Gram–Schmidt Process; QR-Decomposition	Ex 6.3 (27-31, 45-49)
	Orthogonal Matrices	Ex 7.1 (1-4)
	Orthogonal Diagonalization	Ex 7.2 (7-14)
8	General Linear Transformations	Ex 8.1 (1-22)
	Compositions and Inverse Transformations	Ex 8.2 (1-8)
	Isomorphism	Ex 8.3 (1-20)
	FINAL TERM EXAM	