

Tentative Weekly Lectures Schedule:

Weeks	Contents/Topics	Remarks	Exercises	CLO's	Tools
Week 1	Introduction, System of Linear equations, Elementary row operation		1.1 (1-20)	1	Q1, A1, M1, F
Week 2	Solving system of Linear equations: Gaussian Elimination and Gauss Jordan methods Matrix Operations Elementary Matrices, Methods for finding Inverse, Invertible Matrices,	Assignment 1	1.2 (1-26) 1.5 (1-6, 11-18) 1.6 (1-20)		
Week 3	Diagonal, triangular, and symmetric matrices, Matrix Transformations		1.7 (1-10, 19-28) 1.8 (1-24, 27-41) (CLO 2)		
Week 4	Application no 1: Network Analysis Determinants and their properties, Minors, Cofactors, Inverse using cofactors, Cramer's Rule	Quiz 1	1.10 (1-4) (CLO 3) 2.1 (1-32) 2.2 (1-23) 2.3(1-29,31,32)		
Week 5	General Vector Space Subspaces		4.1 (1,2,9,11, 12) Example: 1-5,7 4.2 (1-5, 19) Example: 1-6,13		
Week 6	1 st Mid Term Exam				
Week 7	Spanning Sets Linear Independence		4.3 (1-20) 4.4 (1-15)	2	Q2, A2, M2, F
Week 8	Coordinates and Bases Dimensions Change of basis	Quiz 2	4.5 (1-22) 4.6 (1-8,10,12-13,15-20) 4.7 (1-19)		
Week 9	Bases for row, column, and null spaces, Rank and Nullity	Assignment 2	4.8 (1-19,21-30) 4.9 (1-14,19-36)		
Week 10	Eigenvalues and Eigenvectors Diagonalization		5.1 (1-16) 5.2 (1-20)		
Week 11	2 nd Mid Term Exam				
Week 12	Inner product spaces, Orthogonal and orthonormal bases, Gram-Schmidt Process;	Assignment 3	6.1 (1-26) 6.2 (1-12, 17-19)	2	Q3, A3, P, F
Week 13	QR-Decomposition. Orthogonal Matrices		6.3 (1-14, 27-31, 44-49) 7.1 (1-6) (CLO 1)		
Week 14	Orthogonal Diagonalization, Quadratic Forms	Quiz 3	7.2 (1-18) (CLO 1) 7.3 (1-8)(CLO 1)		
Week 15	Application no 2: Single Value Decomposition Markov Chains	Presentation	9.4 5.5	3	
Week 16	Revision				