FAST National University of Computer and Emerging Sciences
FALL 2025
MT-1004 Linear Algebra

Course Content for Final Exam

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Matrix Transformations	**1.8** (1-24, 27-41)
Subspaces Spanning Sets Bases for row, column, and null spaces A=CR decomposition. Rank and Nullity	**4.2** (1-5, 19) Example: 1-6,13 **4.3** (1-20) **4.8** (1-19,21-30) **4.9** (1-14, 19-36)
Eigenvalues and Eigenvectors Diagonalization	**5.1** (1-16) **5.2** (1-20)
Inner product spaces, Orthogonal and orthonormal bases, Gram-Schmidt Process, QR-Decomposition.	**6.1** (1-26) **6.2** (1-12, 17-19) **6.3** (1-14, 27-31, 44-49)
Orthogonal Diagonalization, Quadratic Forms	**7.2** (1-18) **7.3** (1-8)
Application: Single Value Decomposition	 **9.4** (1-12)