

Department of Mathematics & Statistics

MATH 260-T163

Syllabus [32 Lectures: Each 70 min]

(Check the Dates of Exam I & II)

Course Instructor: Dr. Muhammad A. Bokhari (mbokhari@kfupm.edu.sa) Office: 5-411, Ph:2112

Sec. 01: 0940-1050, R 59-2022

Sec. 02: 1100-1210, R 59-2022

Wk	Date	Sec	Topic
1	Jul. 09 –13 (5 Lec)	1.1 1.2 1.4 1.5 1.6	Differential Equations & Math. Models (Only Decay & Growth) Integrals as General & Particular Solutions Separable Equations (without Applications) First Order Linear Differential Equations Substitution Methods & Exact Equations [Only Exact Eqs]
2	Jul. 15 – 20 (6 Lec)	3.1 to 3.5 3.6 4.1 4.2 4.3 4.4	Review: <i>Linear Systems, Matrices & Gaussian Elimination, RREF, Inverse Matrices, Determinants</i> Inverse & Adjoint Matrix The Vector Space \mathbb{R}^3 The Vector Space \mathbb{R}^n & Subspaces Linear Combination & Independence of Vectors Bases & Dimension for Vector Spaces
3	Jul. 23 – 27 (5 Lec)	4.5 5.1 5.2 5.3 5.5	Row & Column Spaces (Rank of Matrix only) Introduction: Second-Order Linear Equations General Solutions of Linear Equations Homogeneous Equations with Constant Coefficients Nonhomogeneous Eq's and Undetermined Coefficients
Major Exam I: Jul 25, 2017 – Tuesday (Materials: Sections 1.1 – 4.3)			
4	Jul. 30 – Au 03 (5 Lec)	5.5 7.1 7.2 6.1 7.3	Method of Variation of Parameters First-Order Systems & Applications Matrices & Linear Systems Introduction to Eigenvalues The Eigenvalue Method for Linear Systems
5	Aug. 06 – 10 (5 Lec)	6.1 7.3 6.2 6.3 7.5	Continued Continued Diagonalization of Matrices Only Caley-Hamilton Theorem Jordan Form
6	Aug. 13 – 17 (5 Lec)	7.5 8.1 8.2	Multiple Eigenvalue Solutions Matrix Exponentials & Linear Systems Nonhomogeneous Lin. Systems (Variation of Parameters only)
Major Exam II: Aug 9, 2017 – Wednesday (Materials: Sections 4.4 – 5.5, 6.1, 7.1-7.3)			
7	Aug. 20 (1 Lec)		Review
Final Exam: Aug 23, 12:30 pm			