King Fahd University of Petroleum and Minerals
Department of Mathematical Sciences
Syllabus Math 260
Summer 2014 (133)
(Instructor: Dr. A. MIMOUNI)

Course: Math 260 (Introduction to Differential Equations and Linear Algebra)
Text Book: Differential Equations and Linear Algebra, C. H. Edwards and D. E. Penny, Prentice Hall, Third Edition (2010).
Objectives: This course introduces elementary differential equations and linear algebra to students of Computer Science, Computer Engineering, System Engineering and Earth Sciences.

Week	Date	Section	Topic	Suggested Homework
1	June 08-12	1.1	Differential Equations & Mathematical Models	2, 12, 22, 30, 36, 40
		1.2	Integrals as General & Particular Solutions	4, 6, 15, 18
		1.4	Separable Equations & Applications	1, 10, 24, 27, 33
		1.5	Linear First-Order Equations	
2	June 15-19	1.5	Linear First-Order Equations (contd.)	4, 12, 24, 28, 32
		1.6	Substitution Methods & Exact Equations	2, 10, 22, 40, 60
		3.1	Introduction to Linear Systems	2, 22, 24, 26
		3.2	Matrices and Gaussian Elimination	4, 8, 14, 28
June 23, 2014: Suggested Time for Exam I				
3	June 22-26	3.3	Reduced Row-Echelon Matrices	3, 10, 24, 35
		3.4	Matrix Operations	3, 10, 20, 24
		3.5	Inverse of Matrices	4, 12, 20, 28
		3.6	Determinants	2, 4, 12, 30, 40, 43
4	June 29-July 03	4.1	The Vector Space R^3	1, 6, 13, 16, 24, 26, 30
		4.2	The Vector Space R^n & Subspaces	3, 8, 16, 19
		4.3	Linear Combination & Independence of Vectors	1, 6, 12, 17, 26
		4.4	Bases & Dimension for Vector Spaces	3, 8, 13, 16, 22
5	July 06-10	5.1	Second-Order Linear Equations	1, 11, 16, 19, 25, 28, 44
		5.2	General Solutions of Linear Equations	2, 8, 13, 24, 26
		5.3	Homogeneous Equations with Constant Coefficients	1, 4, 14, 22, 28, 33, 38
		5.5	Method of Undetermined Coefficients	4, 12, 26, 32, 36
July 10, 2014: Suggested Time for Exam II				
6	July 13-17	5.5	Method of Variation of Parameters	47, 52, 57, 60
		6.1	Introduction to Eigenvalues	2, 15, 24, 28, 36
		6.2	Diagonalization of Matrices	2, 14, 25, 28
		6.3	Applications involving Powers of Matrices	2, 10, 20, 26, 36
July 17-August 03, 2014: Ramadan Break				
7	Aug 03-07	7.1	First-Order Systems & Applications	2, 8, 13, 18, 21
		7.2	Matrices & Linear Systems	2, 4, 12, 16, 20, 25
		7.3	The Eigenvalue Method for Linear Systems	4, 9, 18, 24, 26
		7.5	Multiple Eigenvalue Solutions	
8	Aug 10-12	7.5	Multiple Eigenvalue Solutions (contd.) Review	4, 10, 16, 28, 30

- ③ The date of the final exam will be announced by the Registrar. The Final Exam is comprehensive.
- ③ MATLAB will be used whenever possible.
- ③ KFUPM attendance policy will be enforced.