King Fahd University of Petroleum and Minerals
Department of Mathematics & Statistics
Syllabus Math 260
Semester I, 2009-2010 (091)
Coordinator: Dr. Mohammad Samman

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, Second Edition (2005).
Objectives: This course introduces elementary differential equations and linear algebra to students of Computer Science, Computer Engineering, System Engineering and Earth Sciences.

Lecturer info: Office: **5-409**   Phone: **2674**   E-mail: **msamman@kfupm.edu.sa**
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                     Office hours: 12:10 – 01:00 pm SMW Or by appointment

Week	Date	Section	Topic	Suggested Homework
1	Oct 3 - 7	1.1 1.2	Differential Equations & Mathematical Models Integrals as General & Particular Solutions	2, 12, 22, 30, 36, 40 4, 6, 15, 18
2	Oct 10-14	1.4 1.5	Separable Equations & Applications Linear First-Order Equations	1, 10, 24, 27, 33
3	Oct 17-21	1.5 1.6	Linear First-Order Equations (contd.) Substitution Methods & Exact Equations	4, 12, 24, 28, 32 2, 10, 22, 40, 60
4	Oct 24-28	3.1 3.2	Introduction to Linear Systems Matrices and Gaussian Elimination	2, 22, 24, 26 4, 8, 14, 28
<td colspan="5" align="center">**Tuesday November 3, 2009: Suggested Time for Exam I**</td>
5	Oct 31-4 Nov	3.3 3.4	Reduced Row-Echelon Matrices Matrix Operations	3, 10, 24, 35 3, 10, 20, 24
6	Nov 7-11	3.5 3.6	Inverse of Matrices Determinants	4, 12, 20, 28 2, 4, 12, 30, 40, 43
7	Nov 14-18	4.1 4.2	The Vector Space R^3 The Vector Space R^n & Subspaces	1, 6, 13, 16, 24, 26, 30 3, 8, 16, 19
<td colspan="5" align="center">**Id al-Adha Vacation: November 19 – December 4**</td>
8	Dec 5- 9	4.3 4.4	Linear Combination & Independence of vectors Bases & Dimension for Vector Spaces	1, 6, 12, 17, 26 3, 8, 13, 16, 22
9	Dec 12- 16	5.1 5.2	Second-Order Linear Equations General Solutions of Linear Equations	1, 11, 16, 19, 25, 28, 44 2, 8, 13, 24, 26
		Tuesday	**December 22, 2009:Time for Exam II**	
10	Dec 19-23	5.3 5.5	Homogeneous Equations with Constant Coeffs. Method of Undetermined Coefficients	1, 4, 14, 22, 28, 33, 38 4, 12, 26, 32, 36
11	Dec 26-30	5.5 6.1	Method of Variation of Parameters Introduction to Eigenvalues	47, 52, 57, 60 2, 15, 24, 28, 36
12	Jan 2-6	6.2 6.3	Diagonalization of Matrices Applications involving Powers of Matrices	2, 14, 25, 28 2, 10, 20, 26, 36
13	Jan 9-13	7.1 7.2	First-Order Systems & Applications Matrices & Linear Systems	2, 8, 13, 18, 21 2, 4, 12, 16, 20, 25
14	Jan 16-20	7.3 7.5	The Eigenvalue Method for Linear Systems Multiple Eigenvalue Solutions	4, 9, 18, 24, 26
15	Jan 23-27	7.5	Multiple Eigenvalue Solutions (contd.) Review	4, 10, 16, 28, 30

Grading policy:

Homework	3% submission of HW + 10% [pop quizzes out of the HW + other quizzes]
Matlab	4%
Attendance	3% 0.5 point will be deducted for each absence
Exam I	22%
Exam II	22%
Final Exam	36% (Comprehensive)