

King Fahd University of Petroleum and Minerals  
 Department of Mathematics and Statistics  
**SYLLABUS Math 260**  
 Semester I: 2007-2008 (071)  
**(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.

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 Office hours: 10: 00 – 11: 00 pm SMW (Or by appointment)

Week	Date	Section	Topic	Suggested Homework
1	Sept 8-12	1.1	Differential Equations & Mathematical Models	2, 12, 22, 30, 36, 40
		1.2	Integrals as General & Particular Solutions	4, 6, 15, 18
2	Sept. 15-19	1.4	Separable Equations & Applications	1, 10, 24, 27, 33
		1.5	Linear First-Order Equations	
<b>Sunday, September 23, 2007: National Holiday</b>				
3	Sept 22-26	1.5	Linear First-Order Equations (contd.)	4, 12, 24, 28, 32
		1.6	Substitution Methods & Exact Equations	2, 10, 22, 40, 60
4	Sep.29-Oct.03	3.1	Introduction to Linear Systems	2, 22, 24, 26
		3.2	Matrices and Gaussian Elimination	4, 8, 14, 28
<b>Thursday, October 4 to Friday, October 19, 2007: Id al-Fitr Vacation</b>				
5	Oct 20-25*	3.3	Reduced Row-Echelon Matrices	3, 10, 24, 35
		3.4	Matrix Operations	3, 10, 20, 24
6	Oct27-31	3.5	Inverse of Matrices	4, 12, 20, 28
		3.6	Determinants	2, 4, 12, 30, 40, 43
<b>Wednesday, October 31, 2007: Suggested Time for Exam I</b>				
7	Nov. 3-7	4.1	The Vector Space $\mathbb{R}^3$	1, 6, 13, 16, 24, 26, 30
		4.2	The Vector Space $\mathbb{R}^n$ & Subspaces	3, 8, 16, 19
8	Nov. 10-14	4.3	Linear Combination & Independence of Vectors	1, 6, 12, 17, 26
		4.4	Bases & Dimension for Vector Spaces	3, 8, 13, 16, 22
9	Nov. 17-21	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
10	Nov 24-28	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
11	Dec 01-05	5.5	Method of Variation of Parameters	47, 52, 57, 60
		6.1	Introduction to Eigenvalues	2, 15, 24, 28, 36
<b>Wednesday, December 05, 2007: Suggested Time for Exam II</b>				
12	Dec 8-12	6.2	Diagonalization of Matrices	2, 14, 25, 28
		6.3	Applications involving Powers of Matrices	2, 10, 20, 26, 36
<b>Thursday, December 13 to Friday, December 28, 2007: Id al-Adha Vacation</b>				
13	Dec. 29-Jan. 2	7.1	First-Order Systems & Applications	2, 8, 13, 18, 21
		7.2	Matrices & Linear Systems	2, 4, 12, 16, 20, 25
14	Jan. 05-9	7.3	The Eigenvalue Method for Linear Systems	4, 9, 18, 24, 26
		7.5	Multiple Eigenvalue Solutions	
15	Jan.12-16	7.5	Multiple Eigenvalue Solutions (contd.)	4, 10, 16, 28, 30

- Thursday October 25, Normal Saturday Classes

**Evaluation policy:**

Homework	5% submitting + 10% pop quizzes out of the HW
Matlab	5%
Attendance	4% 0.5 point will be deducted for each absence
Exam I	20%
Exam II	20%
Final Exam (Comprehensive)	36%

