KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS
Department of Mathematics & Statistics
Syllabus Math 260 (122)
Coordinator: **Dr.Khalid AbdulAziz Al-Shammari**
(kshamari@kfupm.edu.sa , B-5/328)

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.

Instructor: Dr. Mohammed Alshahrani, mshahrani@kfupm.edu.sa,
Building 5, Room 201-1, 03-860-7748

Office Hours: SMW 11:00-11:50 and also by appointment

Grading Policy:

1. **Exam I** 70% written & 30% multiple choice type	**Material:** (1.1–3.4)	**Place:** TBA	25% (100 points)
	Date: Monday March 4, 2013	**Time:** TBA	
2. **Exam II** 70% written & 30% multiple choice type	**Material:** (3.5–5.5)	**Place:** TBA	25% (100 points)
	Date: Monday April 15, 2013	**Time:** TBA	
3. **Final Exam** 70% written & 30% multiple choice type	**Material:** (Comprehensive)	**Place:** TBA	35% (140 points)
	Date: TBA	**Time:** TBA	

The questions of the common exams are based on the examples, homework problems and the exercises of the textbook.

4. **Class Work**	• **Homework:**
	  • Every Saturday, you have to submit the homework problems of the sections covered in the previous week.
	  • Use the cover page to be sent to you.
		2.5%
		(10 points)

	• **Online Quizzes:** It is based on online quizzes through WebCT every other week.	12.5% (50 points)
	The average x (out of 60) of class activities of the sections taught by the same instructor should be in the interval [36, 45].	

Supporting Sites This course will be supplemented by the following websites

- My personal website: http://faculty.kfupm.edu.sa/MATH/mshahrani/
- WebCT:
- My own SIS: http://mymathsis.info/mysis/ where you can follow-up your grades and attendance. The username and password required to access your account is your ID# without 's'.

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Pacing Schedule:

Week	Date	Section	Topic	Suggested Homework
1	Jan. 26-30	1.1 1.2	Differential Equations & Mathematical Models Integrals as General & Particular Solutions	2, 12, 22, 30, 36, 40 4, 6, 15, 18
2	Feb. 02-06	1.4 1.5	Separable Equations & Applications Linear First-Order Equations	1, 10, 24, 27, 33
3	Feb. 09-13	1.5 1.6	Linear First-Order Equations (contd.) Substitution Methods & Exact Equations	4, 12, 24, 28, 32 2, 10, 22, 40, 60
4	Feb. 16-20	3.1 3.2	Introduction to Linear Systems Matrices and Gaussian Elimination	2, 22, 24, 26 4, 8, 14, 28
5	Feb. 23-27	3.3 3.4	Reduced Row-Echelon Matrices Matrix Operations	3, 10, 24, 35 3, 10, 20, 24
6	Mar. 02-06	3.5 3.6	Inverse of Matrices Determinants	4, 12, 20, 28 2, 4, 12, 30, 40, 43
7	Mar. 09-13	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
8	Mar. 16-20	4.3 4.4	Linear Combination & Independence of Vectors Bases & Dimension for Vector Spaces	1, 6, 12, 17, 26 3, 8, 13, 16, 22
Midterm Vacation: March 23-March 27, 2013				
9	Mar. 30-Apr 03	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
10	Apr. 06-10	5.3 5.5	Homogeneous Equations with Constant Coefficients Method of Undetermined Coefficients	1, 4, 14, 22, 28, 33, 38 4, 12, 26, 32, 36
11	Apr. 13-17	5.5 6.1	Method of Variation of Parameters Introduction to Eigenvalues	47, 52, 57, 60 2, 15, 24, 28, 36
12	Apr. 20-24	6.2 6.3	Diagonalization of Matrices Applications involving Powers of Matrices	2, 14, 25, 28 2, 10, 20, 26, 36
13	Apr. 27-May 01	7.1 7.2	First-Order Systems & Applications Matrices & Linear Systems	2, 8, 13, 18, 21 2, 4, 12, 16, 20, 25
14	May 04-08	7.3 7.5	The Eigenvalue Method for Linear Systems Multiple Eigenvalue Solutions	4, 9, 18, 24, 26
15	May 11-15	7.5	Multiple Eigenvalue Solutions (contd.) Review	4, 10, 16, 28, 30

Attendance: KFUPM attendance policy will be enforced. A **DN grade** will be awarded to any student who accumulates 9 unexcused absences.

Missing one of the Two Common Major Exams-I or II:

No makeup exam will be given under any circumstance. When a student misses Exam-I or Exam-II for a legitimate reason (such as medical emergencies), his grade for this exam will be determined based on the existing formula which depends on his performance in the non-missing exam and in the final exam.

Academic Integrity:

All KFUPM policies regarding ethics apply to this course.