KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS
Department of Mathematics & Statistics
Syllabus Math 260 (122)
Coordinator: **Dr.Khalid AbdulAziz Al-Shammari**
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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	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
Major Exam-I March 4, 2013 Monday (1.1 – 3.4).				
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
Major Exam-II April 15, 2013 Monday (3.5 – 5.5).				
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

Grading Policy:

- **Major Exam-I 25% (100 points)**
- **Major Exam-II 25% (100 points).**
- **Final Exam 35% (140 points) Comprehensive**
  (All exams will be a combination of 70% written & 30% multiple choice type)
- **Class Work: 15% (60 points)** It is based on Quizzes (Minimum 4 quizzes), Homework & Attendance.

  The **average** (x out of 60) of the Class Work of the sections taught by the same instructor should be in the interval [36, 45].

Attendance:

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

Exam Questions:

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

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.