King Fahd University of Petroleum & Minerals
Department of Mathematics and Statistics
Syllabus of Math 280 (112)

(Course Instructor: Dr. A. Mimouni; Office: 5-303; Tel: 4036; email: amimoui@kfupm.edu.sa)

Course: Math 280
Title: Introduction to Linear Algebra
Textbook: *Elementary Linear Algebra,* 6th ed. (1996), by Bernard Kolman
Objectives: To introduce the students to the basic concepts and techniques of elementary linear algebra

Week	Date	Section	Material	Homework Problems
1	Jan. 28-Feb. 01	1.1 1.2	Systems of linear equations Matrices: Matrix operations	2,4,8,15,18,20 2,6,8,11,14,25
2	Feb. 04-08	1.3 1.4	Algebraic properties of matrix operations Special types of matrices	3,12,19,20,30,32 1,3,7,10,15,36
3	Feb. 11-15	1.5 1.6	Echelon form of a matrix Finding A^{-1}	1,6c,8,14,24,26 6,8,14,24,26
4	Feb. 18-22	2.2 2.3	Vector spaces Subspaces	3,4,9,12,18,21 2,6,8,10,11,24
5	Feb. 25-29	2.4 2.5	Linear independence Basis and dimension	2,4,6,12(a,c),19,23 2,4,8,10,13,15,20,26
6	Mar. 03-07	2.6 2.7	Coordinates and isomorphisms Homogeneous systems	2,4,13,17,22,35 2,6,14,18,19
7	Mar. 10-14	2.8 3.1	The rank of a matrix The standard inner product of R^2 and R^3	2,6,10,14,20,26 2,6,8,10,24,28,31
8	Mar. 17-21	3.3 3.4	Inner product spaces The Gram-Schmidt process	7,10,14,28,34,36 2,8,9,14,23,26
Midterm Vacation, March 24-28, 2012				
9	Mar.31-Apr. 04	4.1 4.2	Definition and example of a linear transf. The kernel and range of a linear transf.	2,7,10,13,16,20 2,4,9,13,19,26
10	Apr. 07-11	4.3 4.6	The matrix of a linear transformation Similarity	2,7,9,14,18,22 2,5,6,7,8,16
11	Apr. 14-18	5.1 5.2	Definition of a determinant Properties of determinants	8,10,12,14,16 4,9,11,20,26,30
12	Apr. 21-25	5.3 5.4	Cofactor expansion The inverse of a matrix	2,4,6,8,12,14 2,4,7,10,12,13
13	Apr. 28-May 02	5.5 6.1	Other applications of determinants Diagonalization	2,3,4,6,8,13 2,5,8,10,11,15,16,18
14	May 05-09	6.1 6.2	Diagonalization (cont'd.) Diagonalization of symmetric matrices	22,26,29,33 2,4,16,20,24,28,31
15	May 12-16	6.2 6.3	(cont'd.) Real quadratic forms	 2,4,10,12,16,18

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Office Hours: **Sat – Monday – Wed**
                                                        10:00 – 12:00 a.m.
                                                         Also by Appointment

Exams and Distribution of Marks:

Exam I (20%):   Material: From Section 1.1 To Section 2.3, Tuesday, February 28, 2012
Exam II (20%): Material: From Section 2.4 To Section 3.4, Tuesday, April 3, 2012
Exam III (20%): Material: From Section 4.1 To Section 5.4, Tuesday, May 01, 2012

Time and location for exams will be discussed

Homework and Attendance: *will be a reference for adjusting final letter grades.*

Final Exam 40% (Comprehensive): Wednesday, May 23, 2012, Time: 7:00 PM, Location: ?

The DN Grade: According to the university regulation