

**King Fahd University of Petroleum and Minerals**  
**Department of Mathematical Sciences**  
**Syllabus Math 260**  
**Semester: Summer Session 2010 (093)**  
**Instructor: Dr. Issam LOUHICHI**

**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 2001

**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	July 03--07	1.1	Differential Equations & Mathematical Models	2, 11, 20, 30, 32, 39
		1.2	Integrals as General & Particular Solutions	4, 6, 15, 18
		1.4	Separable Equations & Applications	1, 10, 24, 27, 29
		1.5	Linear First-Order Equations	4, 12, 24, 28, 32
2	July 10--14	1.6	Substitution Methods & Exact Equations	2, 10, 22, 40, 48
		3.1	Introduction to Linear Systems	2, 22, 24, 26
		3.2	Matrices and Gaussian Elimination	4, 8, 14, 28
3	July 17--21	3.3	Reduced Row-Echelon Matrices	3, 10, 24, 35
		3.4	Matrix Operations	3, 10, 20, 24
		3.5	Inverse of Matrices	4, 12, 20, 28
		3.6	Determinants	2, 4, 12, 30, 40, 43
<b>Saturday, July 24: Date for major exam 1</b>				
4	July 24--28	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
		4.3	Linear Combination & Independence of Vectors	1, 6, 12, 17, 26
		4.4	Bases & Dimension for Vector Spaces	3, 8, 13, 16, 22
5	August 1--4	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
		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
6	August 7--11	5.5	Method of Variation of Parameters	47, 52, 57, 60
		6.1	Introduction to Eigenvalues	2, 15, 24, 28, 36
		6.2	Diagonalization of Matrices	2, 14, 25, 28
		6.3	Applications involving Powers of Matrices	2, 10, 11
<b>Saturday, August 14: Date for major exam 2</b>				
7	August 14--18	7.1	First-Order Systems & Applications	2, 8, 13, 18, 21
		7.2	Matrices & Linear Systems	2, 4, 12, 16, 20, 25
		7.3	The Eigenvalue Method for Linear Systems	4, 9, 18, 24, 26
8	August 21--23	7.5	Multiple Eigenvalue Solutions	4, 10, 14, 28, 30
<b>The date and place of the final examination will be arranged by the Registrar.</b> The final examination will be <i>comprehensive</i> .				

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**Dr. Issam LOUHICHI**  
**Summer 2010 ( 093 )**

**Math 260: Introduction to Differential Equations and Linear Algebra (3 – 0 – 3)**

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**Course Title:** Introduction to Differential Equations and Linear Algebra  
**Course Number:** Math 260  
**Textbooks:** Differential Equations and Linear Algebra, C. H. Edwards and D. E. Penny, Prentice Hall 2001  
**Prerequisite:** Math 201  
**Objectives:** This course introduces elementary differential equations and linear algebra to students of Computer Science, Computer Engineering, System Engineering and Earth Sciences.  
**Instructor:** Dr. Issam LOUHICHI  
**Office Location:** 7-110\_1  
**Phone Number:** 1052  
**Office Hours:** Saturday & Sunday: 01:30pm - 04:00pm (or by appointment.)

<b>Grades:</b>	(1)	2 Major Exams (25 points each)	50%
	(2)	7 Quizzes	20%
	(3)	Comprehensive Final	30%
		Total:	100%

**Attendance:** The university regulations on attendance say: students are expected to attend all classes. However, valid excuses are accepted for eligible reasons.

1. The only acceptable excuse for absence is the one authorized by the Deanship of Student Affairs on their prescribed form.
2. The excuse should be presented to the instructor no later than one week following the resumption of class attendance.
3. **If the unexcused absences reach 7 classes, the student will get a “WF” grade.**
4. Coming late to the class is not acceptable. However it will be counted as  $\frac{1}{2}$  absence.

**Academic Honesty:** The principles of truth and honesty are fundamental in the academic work. Any type of academic dishonesty will not be forgiven.

1. A cheating in a quiz will result in a ZERO grade on all quizzes.
2. If a student cheats in a major Exam or a final, he may get an “F” in the course and he will be reported to the Dean of the College for further disciplinary action.
3. Any attempt of cheating is considered as an act of academic dishonesty.

**IMPORTANT NOTE:** It is the student’s responsibility to keep informed of any announcements, syllabus adjustments or policy changes made during scheduled classes.