

**King Fahd University of Petroleum and Minerals**  
**Department of Mathematical Sciences**  
**SYLLABUS**  
**Semester I, 2005-2006 (051)**  
**(Coordinator: Prof. Bilal Chanane)**

**Course #:** Math 202  
**Title:** Elements of Differential Equations  
**Textbook:** A First Course in Differential Equations by D.G. Zill, 7<sup>th</sup> and 8<sup>th</sup> Editions.

Wk	Date	Sec.	Material	Homework
1	Sept.10-14	1.1	Definitions and Terminology	4,8,14,20,24
		1.2	Initial Value Problems-Existence and uniqueness	2,4,8,16,18,22
2	Sept.17-21	2.1	Solution curves	1,3,7,8,15,17,20
		2.2	Separable Variables	6,14,22,24,44
National Holiday: Saturday 24 September 2005				
3	Sept.25-28	2.3	Linear Equations	2,5,10,17,30
		2.4	Exact Equations-Integrating Factors	2,5,9,15,25,34,42,43
4	Oct.01-05	2.5	Solutions by Substitutions	6,8,13,21,26,30
		3.1	Linear Equations (Modeling)	5,8,13,20,21,23,27
5	Oct.08-12	4.1.1	Initial and Boundary Value Problems	5,8,11,12
		4.1.2	Homogeneous Equations	16,19,23, 24,25,28,29
6	Oct.15-19	4.1.3	Nonhomogeneous Equations	33,36,38
		4.2	Reduction of Order	3,5,12,13,14,18,19
7	Oct. 22-26	4.3	Homogeneous Linear Equations with Constant Coefficients	12,20,35,40,51
		4.5	Annihilator Approach	3,10,12,24,30,54,62
Id Al-Fitr: 27 October 2005 – 11 November 2005				
8	Nov.12-17*	4.6	Variation of Parameters	11,13,17,27
		4.7	Cauchy-Euler Equations	8,12,25,37,38
9	Nov.19-23	6.1	Solutions about Ordinary Points	1,5,10,12
		6.1.1	Review of Power Series	
10	Nov.26-30	6.1.2	Solutions about Ordinary Points	13,16,18,28
11	Dec.03-07	6.2	Solutions about Singular Points	3,9,14,19,25
12	Dec.10-14	A.II.2	Gauss Elimination	31,34,38
		A.II.3	Eigenvalue Problem	47,48,49,50
13	Dec.17-21	8.1	Preliminary Theory	1,4,10,15,24
		8.2	Homogeneous Linear Systems with Constant coefficients	
14	Dec.24-28	8.2.1	Distinct Real Eigenvalues	3,6,11,13
		8.2.2	Repeated Eigenvalues (m=2,3)	19,21,26,28
15	Dec.31,2005- Jan.04,2006	8.2.3	Complex Eigenvalues	33,38,42,44
		8.3 (8.3.2)	Variation of Parameters (Optional)	1,3,8,13,18
Id Al-Adha: 05 January 2006 – 20 January 2006				
16	Jan.21		Classes resume, last day of classes	

**Remark: Section 8.3.2 in the 8<sup>th</sup> edition corresponds to section 8.3 in the 7<sup>th</sup> edition.**

**Some of the homework problems in the 8<sup>th</sup> and the 7<sup>th</sup> editions are different.**

- **\*Thursday November 17 is a normal Saturday class**
- KFUPM attendance policy will be enforced. **DN grade for 9 and more unexcused absences**
- Exam # 1: Sunday October 9, 2005 (Suggested by the CS)
- Mid Term warning: Tuesday October 18, 2005
- Exam # 2: Tuesday December 6, 2005 (Suggested by the CS )
- Final Exams: January 22-31, 2006
- Tuesday, September 20, 2005: Last day for dropping courses without permanent record
- Tuesday, November 30, 2005: Last day for dropping courses with a grade of "W"
- Wednesday, December 28, 2005: Last day for withdrawal from all courses with grade of "WP/WF"

<b>Instructor</b>	Name	
	Office Number	
	Office Hours	
	e-mail and/or website	