

**King Fahd University of Petroleum and Minerals**  
**Department of Mathematical Sciences**  
**SYLLABUS**  
**Semester I, 2006-2007 (061)**  
**(Coordinator: F. D. Zaman)**

<b>Course #:</b>	<b>Math 301</b>
<b>Title:</b>	Methods of Applied Mathematics
<b>Textbook:</b>	Advanced Engineering Mathematics by Zill and Cullen (Second Edition, 1999).

Wk	Date	Sec.	Section Title	Homework
1	Sep. 9-14*	9.1 9.5 9.7	Vector Functions The Directional Derivative Divergence and Curl	3,11,20,25,28,41 3,6,9,13,21,30 8,14,23,30
2	Sep. 16-20	9.8 9.9	Line Integrals Line Integrals Independent of the Path	5,10,16,22,30 7,15,18,23,28
3	Sep. 25**-27	9.12 9.13	Green's Theorem Surface Integrals	2,6,17,25 3,11,26,33
4	Sep. 30-Oct .4	4.1 4.2	Definition of the Laplace transform Inverse Transform, Transforms of Deriv	3,5,17, 29,38,40(c) 5,13,15,19,35,36
<b>First Major Exam: Monday, Oct. 9, 2006</b>				
5	Oct .7-11	4.3 4.4 4.5	Translation Theorems Additional Properties Dirac Delta Function	8,13,20,24, 47,60,66 5,16,19(b),23,34, 45 4,8,12
<b>Eid al-Fitre Vacation: October 12, 2006 – October 27, 2006</b>				
6	Oct. 28-Nov.1	12.1 12.2	Orthogonal Functions Fourier Series	6,12,16,18 4,6,16,20
7	Nov.4-8	12.3 12.4	Fourier Cosine and Sine Series Complex Fourier Series	4,6,14,16,26,38 2,4,6,11
8	Nov.11-15	12.5	Sturm-Liouville Theorem	2,4,6,8,14
9	Nov.18-22	12.6	Bessel and Legendre Series	2,4,6,8,10,20
10	Nov.25-29	13.1 13.3	Separable Partial Differential Equation Heat Equation	2,10,14,18,20,24,28 2,4,6,8,10
11	Dec. 2-6	13.4 13.5	Wave Equation Laplace's Equation	2,4,6,8,10 2,4,8,10,14
<b>Second Major Exam: Monday, Dec. 11, 2006</b>				
12	Dec. 9-13	14.2 14.3	Problems in Polar and Cylindrical Coord Problems in Spherical Coordinates	2,4,8,10 4,6,12
13	Dec.16-20	15.2	Applications of the Laplace Transform	6,8,10,14,28
<b>Id al-Adha Vacation: December 21, 2006-January 5, 2007</b>				
14	Jan. 6-10	15.3	Fourier Integral Theorem,	4,8,12,18
15	Jan.13-17	15.4	Fourier Transforms	6,10,12,18

\*Thursday 14 September is a normal Saturday class

\*\*Saturday 23 September is a national holiday.

CAS assignments are to be assigned by the instructor.

KFUPM attendance policy will be enforced. **DN grade for 9 or more unexcused absences.**

Final examination shall be comprehensive.

