

King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
SYLLABUS
Semester I, 2007-2008 (071)
(Coordinator: F. D. Zaman)

Course	Math 301
Title	Methods of Applied Mathematics
Textbook	Advanced Engineering Mathematics by Zill and Cullen (Third Edition, 1999).

Wk	Date	Sec.	Section Title	Homework
1	Sep. 8-12	9.1	Vector Functions	3,11,20,25,28,41
		9.5	The Directional Derivative	3,6,9,13,21,30
		9.7	Divergence and Curl	8,14,23,30
2	Sep. 15-19	9.8	Line Integrals	5,10,16,22,30
		9.9	Line Integrals Independent of the Path	7,15,18,23,28
3	Sep. 22-26*	9.12	Green Theorem	2,6,17,25
		9.14	Surface Integrals	3,11,26,33
4	Sep. 29-Oct.3	9.14	Stokes' Theorem	3,6,14,17
		9.16	Divergence Theorem	2,4,11
Eid Al-Fitr Break: October 4-19				
5	Oct.20-25**	4.1	Definition of the Laplace transform	3,5,17, 29,38,40(c)
		4.2	Inverse Transform, Transforms of Deriv	5,13,15,19,35,36
First Major Exam: Thursday, Oct. 25, 2007				
6	Oct. 27-31	4.3	Translation Theorems	8,13,20,24, 47,60,66
		4.4	Additional Properties	5,16,19,23,34, 45
		4.5	Dirac Delta Function	4,8,12
7	Nov. 3-7	12.1	Orthogonal Functions	6,12,16,18
		12.2	Fourier Series	4,6,16,20
8	Nov.10-14	12.3	Fourier Cosine and Sine Series	4,6,14,16,26,38
		12.4	Complex Fourier Series	2,4,6,11
9	Nov.17-21	12.5	Sturm-Liouville Theorem	2,4,6,8,14
Second Major Exam: Wednesday, Nov. 28, 2007				
10	Nov.24-28	12.6	Bessel and Legendre Series	2,4,6,8,10,20
11	Dec.1-5	13.1	Separable Partial Differential Equation	2,10,14,18,20,24,28
		13.3	Heat Equation	2,4,6
12	Dec.8-12	13.4	Wave Equation	2,4,6,8,10
		13.5	Laplace's Equation	2,4,8,10,14
Id al-Adha Vacation: December 13- 28, 2007				
13	Dec..29-Jan.2	14.2	Problems in Polar and Cylindrical Coord	2,4,8,10
		14.3	Problems in Spherical Coordinates	4,6,12
14	Jan.5-9	15.2	Applications of the Laplace Transform	6,8,10,14,27
15	Jan. 12-16	15.3	Fourier Integral Theorem	4,8,12,18
		15.4	Fourier Transforms	6,10,12,18

*Saturday 23 September is national holiday.

**Thursday 25 October is a normal Saturday class

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.

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