

King Fahd University of Petroleum and Minerals
Department of Mathematical Sciences

SYLLABUS

Summer 2005-2006 (053)

Dr. A. Cherid

Course # **Math 301**

Title **Methods of Applied Mathematics**

Textbook **Advanced Engineering Mathematics by Zill and Cullen (Second Edition, 1999) Jones and Barlett Publishers.**

Wk	Date	Sec.	Material	Homework
1	June 24-28	9.1 9.5 9.7 9.8	Vector Functions The Directional Derivative Divergence and Curl Line Integrals	4,12,20,26,28,41 4,8,10,14,22,30 4,14,24,28 6,10,16,30
2	July 01-05	9.9 9.12 9.13 9.14 9.16	Line Integrals Independent of the Path Green's Theorem Surface Integrals Stokes' Theorem Divergence Theorem	6,15,18,24,28 3,6,18,25 3,10,26,33 3,6,14,17 2,4,11
3	July 08-12	4.1 4.2 4.3 4.4	Definition of the Laplace transform Inverse Transform, Transforms of Derivatives Translation Theorems Additional Properties	4,6,18,25,30,38,40(a) 5,12,16,19,35,37 8,13,20,24,38,47,60, 6,16,19(c),23,34,39,45
Wednesday July 12: Major Exam I				
4	July 15-19	4.5 12.1 12.2	Dirac Delta Function Orthogonal Functions Fourier Series	4,8,12 6,12,16,18 4,6,16,20
5	July 22-26	12.3 12.4 12.5 12.6	Fourier Cosine and Sine Series Complex Fourier Series Sturm-Liouville Theorem Bessel and Legendre Series	4,6,14,16,26,38 2,4,6,11 2,4,6,8,14 2,4,6,8,10,20
6	July 29-August 02	13.1 13.3 13.4	Separable Partial Differential Equation Heat Equation Wave Equation	2,10,14,18,20,24,28 2,4,6,8,10 2,5,7,8,10
Wednesday July 29: Major Exam II				
7	August 05-09	13.5 14.2 14.3 15.2	Laplace's Equation Problems in Polar and Cylindrical Coordinates Problems in Spherical Coordinates Applications of the Laplace Transform	2,4,8,10,14 2,3,7,11 4,6,12 6,8,10,14,28
8	August 12-14	15.3 15.4	Fourier Integral Theorem Fourier Transforms	4,8,12,18 6,10,12,18

- KFUPM attendance policy will be enforced.
- Saturday, July 18, 2006: Last day for dropping courses with "W" (Thru Internet)
- Saturday, August 12, 2006 withdrawal from all courses with grade of "WP/WF".
- Final Exam (Comprehensive).
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