

King Fahd University of Petroleum and Minerals
Department of Mathematical Sciences
SYLLABUS
Semester II-2005-2006 (052)

(Dr. RS Alassar)

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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	Feb 12 – 16*	9.1 9.5 9.7	Vector Functions The Directional Derivative Divergence and Curl	6,10,17,26,38,41,45 1,6,10,17,22,30 2,6,14,22,28
2	Feb 18-22	9.8 9.9	Line Integrals Line Integrals Independent of the Path	2,8,12,16,34 1,4,15,21,24,26
3	Feb 25- March 1	9.12 9.13	Green's Theorem Surface Integrals	1,4,6,18,24 3,5,10,28,34
4	March 4-8	9.14 9.16	Stokes' Theorem Divergence Theorem	2,3,6,8,16 1,4,8,11
5	March 11-15	4.1 4.2	Definition of the Laplace transform Inverse Transform, Transforms of Derivatives	2,5,14,26,30,38,40(b) 1,10,18,19,32,36
6	March 18-22	4.3 4.4 4.5	Translation Theorems Additional Properties Dirac Delta Function	6,13,20,24,37,48,63 2,10,16,22,38,46 1,4,8,12
7	March 25-29	12.1 12.2	Orthogonal Functions Fourier Series	3,6,11,14,21 2,6,11,20
<i>April 1-2 Midterm Break</i>				
8	April 3-5	12.3 12.4	Fourier Cosine and Sine Series Complex Fourier Series	1,8,12,16,25,36 3,6,11
9	April 8-12	12.5	Sturm-Liouville Theorem	2,4,6,12
10	April 15-19	12.6	Bessel and Legendre Series	2,4,6,8,15,20
11	April 22-26	13.1 13.3	Separable Partial Differential Equation Heat Equation	1,8,13,16,20,26,28 2,3,6,8,9
12	April 29-May 3	13.4 13.5	Wave Equation Laplace's Equation	2,4,8,10,16 1,4,7,10,14
13	May 6-10	14.2 14.3	Problems in Polar and Cylindrical Coordinates Problems in Spherical Coordinates	3,4,9,10 1,5,11,12
14	May 13-17	15.2	Applications of the Laplace Transform	2,4,8,10,14,28
15	May 20-24	15.3 15.4	Fourier Integral Theorem Fourier Transforms	1,5,10,18 2,6,10,12,16
16	May 27-28		Revision and catching up	

- Thursday, February 16 is a Normal Saturday Class
- Saturday, March 25, Exam I
- Saturday, April 29, Exam II