King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
SYLLABUS MATH 301
Semester 123 (Summer 2013) Class: SUMTW. 09:20 – 10:20. Bldg 59, 1017.

Instructor: Muhammad Yousuf

Course	Math 301
Title	Methods of Applied Mathematics
Textbook	Advanced Engineering Mathematics by Zill, Wright and Cullen (Fourth Edition, 2011).
Bulletin Description	Special functions. Bessel's functions and Legendre polynomials. Vector analysis including vector fields, divergence, curl, line and surface integrals, Green's, Gauss' and Stokes' theorems. Systems of differential equations. Sturm-Liouville theory. Fourier series and transforms. Introduction to partial differential equations and boundary value problems.

Week	Date	Sec.	Material	Homework
1	June 08 – 12	9.1	Vector Functions	3,11,20,25,28,41
		9.5	The Directional Derivative	6,9,13,21,30
		9.7	Divergence and Curl	8,14,23,30
		9.8	Line Integrals	5,10,16,22,30
2	June 15 – 19	9.9	Independent of the Path	7,15,18,23,28
		9.12	Green's Theorem	2,6,17,25
		9.13	Surface Integrals	3,11,26,33
		9.14	Stokes' Theorem	3,6,14,17
3	June 22 – 26	9.16	Divergence Theorem	2,4,11
		4.1	Definition of the Laplace transform	3,5,17, 29,33,38
		4.2	Inverse Transform, Transforms of Derivatives	5,13,15,19,36
		4.3	Translation Theorems	8,13,20,24, 47,66
First Major Exam Saturday, June 29, 2013				
4	June 29 – July 03	4.4	Additional Properties	5,16,23,34, 45
		4.5	Dirac Delta Function	4,8,12
		12.1	Orthogonal Functions	6,12,16,18
		12.2	Fourier Series	4,6,16,20
5	July 06 –10	12.3	Fourier Cosine and Sine Series	4,6,14,16,26,38
		12.5	Sturm-Liouville Theorem	2,4,6,8,14
		12.6	Bessel and Legendre Series	2,4,6,8,10,20
6	July 13 – 17	13.1	Separable PDE	2,10,14,20,24,28
		13.3	Heat Equation	2,4,6
		13.4	Wave Equation	2,4,6,8,10
		13.5	Laplace's Equation	2,4,8,10,14
Second Major Exam Saturday, July 20, 2013				
7	July 20 – 24	14.2	Problems in Polar and Cylindrical Coordinates	2,4,8,10
		14.3	Problems in Spherical Coordinates	4,6,12
		15.2	Applications of the Laplace Transform	6,8,10,14,27
8	July 27	15.4	Fourier Transforms	6,10,12,16,18
Final Exam Comprehensive Sunday July 28, 2013 **at 09:00 PM**				

Important Dates

June 15	Last day for dropping course(s) without permanent record
July 03	Last day for dropping course(s) with grade of "W" thru **http://regweb.kfupm.edu.sa**
July 10	Last day for withdrawal from all courses with grade of "W" thru the Registrar Office
July 22	Last day for withdrawal from all courses with grade of "WP/WF" thru the Registrar Office

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webpage http://faculty.kfupm.edu.sa/math/myousuf/ Office Hours: 11:35 – 12:35 PM

Grading Policy: Two Majors each 25%; Quizzes 10%; HW 3%; Attend. 2 %; Final 35%