

**King Fahd University of Petroleum and Minerals**  
**Department of Mathematics and Statistics**  
**SYLLABUS**  
**Summer Semester: 2013-2014(133)**  
Coordinator: Dr. Muhammad Islam Mustafa

**Course #:** MATH 301  
**Title:** Methods of Applied Mathematics  
**Textbook:** Advanced Engineering Mathematics by Zill and Wright (Fifth Edition)

Week	Date	Sec.	Topics	Suggested Homework Problems
1	June 8 - 12	9.1 9.5 9.7 9.8	Vector Functions The Directional Derivative Curl and Divergence Line Integrals	1,12,16,17,21,26,33, 41 2,7,9,14,17,21,23,32,29 2,6,10,14,17,22,27 2,6,8,11,16,19,24,28,33
2	June 15 -19	9.9 9.12 9.13 9.14	Independence of the Path Green's Theorem Surface Integrals Stokes' Theorem	1,10,15,18,21,26 2,4,6,9,18,23,25 2,5,10,13,18,22,25,33 1,3,6,8,13,17
3	June 22 -26	9.16 4.1 4.2 4.3	Divergence Theorem Definition of the Laplace transform Inverse Transform, Transforms of Derivatives Translation Theorems	2,4,7,11,14 1,5,14,26,30,37,43 2,10,19,22,24,32,35 2,8,13,20,24,31,37,48,55,63
<b>Major Exam I : Thursday, June 26</b>				
4	June 29 - July 3	4.4 4.5 12.1 12.2	Additional Operational Properties The Dirac Delta Function Orthogonal Functions Fourier Series	1,10,16,22,27,31,38,46 1,4,8,12 2,6,11,13 1,6,12,17,20
5	July 6 -10	12.3 12.5	Fourier Cosine and Sine Series Sturm-Liouville Theorem	1,8,12,16,25,35,38 2,4,6,12
<b>Major Exam II : Tuesday, July 15</b>				
6	July 13 -17	12.6 13.1 13.3 13.4	Bessel and Legendre Series Separable Partial Differential Equations Heat Equation Wave Equation	2,4,6,8,15,20 2,8,12,16,22,26,27 2,3,6 1,6,9,16,23
<b>Ramadhan Break : 20 - 31 July</b>				
7	August 3 -7	13.5 14.2 14.3 15.2	Laplace's Equation Problems in Cylindrical Coordinates Problems in Spherical Coordinates Applications of the Laplace Transform	2,4,7,10,14 2,4,9,12 2,5,11,12 2,4, 10,14,18,24
8	Aug. 10 -12	15.3 15.4	Fourier Integral Fourier Transforms	1,4,10 1,6,10,12,16
<b>Final Exam : Thursday, August 14, 2014, 08:00 AM</b>				

**Grading Policy:**

Exam I	25%
Exam II	25%
Final Exam	35%
Class work	15%

**Attendance:**

- Attendance is compulsory. KFUPM policy with respect to attendance will be strictly enforced.
- Any student accumulating **9 unexcused absences** will be awarded DN Grade in the course.