

**King Fahd University of Petroleum and Minerals**  
**Department of Mathematics and Statistics**  
**SYLLABUS (Revised)**  
**Semester I: 2015-2016(151)**  
Coordinator: Dr. Mohammad Kafini

**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	Aug. 23 - 27	9.1	Vector Functions	1,12,16,17,21,26,33, 41
		9.5	The Directional Derivative	2,7,9,14,17,21,23,32,29
2	Aug30 - Sep 3	9.7	Curl and Divergence	2,6,10,14,17,22,27
		9.8	Line Integrals	2,6,8,11,16,19,24,28,33
3	Sep. 6-10	9.9	Independence of the Path	1,10,15,18,21,26
		9.12	Green's Theorem	2,4,6,9,18,23,25
4	Sep. 13-17	9.13	Surface Integrals	2,5,10,13,18,22,25,33
		9.14	Stokes' Theorem	1,3,6,8,13,17
<b>Id al-Adha Vacation: September 18 to Oct. 3, 2015</b>				
5	Oct. 4 - 8	9.16	Divergence Theorem	2,4,7,11,14
		4.1	Definition of the Laplace transform	1,5,14,26,30,37,43
6	Oct. 11 - 15	4.2	Inverse Transform, Transforms of Derivatives	2,10,19,22,24,32,35
		4.3	Translation Theorems	2,8,13,20,24,31,37,48,55,63
<b>Major Exam I : Wednesday, Oct. 14, 2015, 6:00 - 8:00 pm, Bldg. 54 , from 9.1 to 9.16.</b>				
7	Oct. 18 - 22	4.4	Additional Operational Properties	1,10,16,22,27,31,38,46
		4.5	The Dirac Delta Function	1,4,8,12
8	Oct. 25 - 29	12.1	Orthogonal Functions	2,6,11,13
		12.2	Fourier Series	1,6,12,17,20
9	Nov. 1 - 5	12.3	Fourier Cosine and Sine Series	1,8,12,16,25,35,38
10	Nov. 8 - 12	12.5	Sturm-Liouville Theorem	2,4,6,12
<b>Major Exam II : Wednesday, Nov. 11, 2015, 5:00 - 7:00 pm, Bldg. 54 , from 4.1 to 12.5.</b>				
11	Nov. 15 - 19	12.6	Bessel and Legendre Series	2,4,6,8,15,20
		13.1	Separable Partial Differential Equations	2,8,12,16,22,26,27
12	Nov. 22 - 26	13.3	Heat Equation	2,3,6
		13.4	Wave Equation	1,6,9,16,23
13	Nov 29- Dec 3	13.5	Lap lace's Equation	2,4,7,10,14
		14.2	Problems in Cylindrical Coordinates	2,4,9,12
14	Dec. 6 - 10	14.3	Problems in Spherical Coordinates	2,5,11,12
		15.2	Applications of the Laplace Transform	2,4, 10,14,18,24
15	Dec. 13 - 17	15.3	Fourier Integral	1,4,10
		15.4	Fourier Transforms	1,6,10,12,16
<b>Final Exam : Sunday, Dec 27, 2015, 07:00 PM, Bldg 54.</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.