King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics

SYLLABUS

Semester I: 2012-2013**(121)**

Coordinator: Dr. A. Bonfoh
Course #: MATH 301
Title: Methods of Applied Mathematics
Textbook: Advanced Engineering Mathematics by Zill, Wright and Cullen (Fourth Edition, 2011)

Week	Date	Sec.	Topics	Suggested Homework Problems
1	Sep 1 – 5	9.1 9.5 9.7	Vector Functions Directional Derivative Divergence and Curl	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	Sep 8 – 12	9.8 9.9	Line Integrals Line Integrals Independent of the Path	2,6,8,11,16,19,24,28,33 1,10,15,18,21,26
3	Sep 15 – 19	9.12 9.13	Green's Theorem Surface Integrals	2,4,6,9,18,23,25 2,5,10,13,18,22,25,33
4	Sep 22 – 26	9.14 9.16	Stokes' Theorem Divergence Theorem	1,3,6,8,13,17 2,4,7,11,14
5	Sep29–Oct 3	4.1 4.2	Definition of the Laplace transform Inverse Transform, Transforms of Derivatives	1,5,14,26,30,37,42(a) 2,10,19,22,24,32,35
First Exam: Wednesday, October 3, 6:00–8:00pm, Material [9.1-9.16], Building 54				
6	Oct 6 – 10	4.3 4.4 4.5	Translation Theorems Additional Properties The Dirac Delta Function	2,8,13,20,24,31,37,48,55,63 1,10,16,22,27,31,38,46 1,4,8,12
7	Oct 13 – 17	12.1 12.2	Orthogonal Functions Fourier Series	2,6,11,13 1,6,12,17,20
EID Vacation: Thursday, October 18 – Friday, November 2, 2012				
8	Nov 3 – 07	12.3	Fourier Cosine and Sine Series	1,8,12,16,25,35,38
9	Nov 10 –14	12.5	Sturm-Liouville Theorem	2,4,6,12
Second Exam: Tuesday, November 20, 6:00-8:00pm, Material [4.1-4.5 & 12.1-12.3], Building 54				
10	Nov 17 – 21	12.6	Bessel and Legendre Series	2,4,6,8,15,20
11	Nov 24 – 28	13.1 13.3	Separable Partial Differential Equation Heat Equation	2,8,12,16,22,26,27 2,3,6
12	Dec 01 – 5	13.4 13.5	Wave Equation Lap lace's Equation	1,3,6,10,17 2,4,7,10,14
13	Dec 08 – 12	14.2 14.3	Problems in Polar and Cylindrical Coordinates Problems in Spherical Coordinates	2,4,9,12 2,5,11,12
14	Dec 15 – 19	15.2	Applications of the Laplace Transforms	2,4, 10,14,18,24
15	Dec 22 – 26	15.3 15.4	Fourier Integral Theorem Fourier Transforms	1,4,10 1,6,10,12,16
Final Exam: Saturday, January 05, 2013 at 7:00pm, Building 54				

Policies

Exams:

- Any student **missing a major exam** with or without excuse **will not be given a Make-Up Exam**.

  However, a student missing an Exam with an official excuse from the "Deanship of Students Affairs" will be compensated according to the following policy.

  Exam Missed by the Student: Grade to be compensated := ExM, Ave of Exam: AveM

  Exam taken by Student: Grade obtained = ExT, Ave of Exam: Ave T

  Final Exam: Grade obtained:= ExT, Ave of Exam: Ave F

  ExM = AveM + [10(ExT-AveT)+14(ExT-AveF)]/24

- **Class Work (60 Points = 15%):** The policy on the class work will be determined by your course instructor.
- **Major 1 and 2 (100 Points = 25% each)**
- **Final Exam (140 Points = 35%):** The exam will be comprehensive.

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.