

King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
SYLLABUS 081
A. H. Bokhari

Course	Math 301
Title	Methods of Applied Mathematics
Textbook	Advanced Engineering Mathematics by Zill and Cullen (Third Edition, 2006).

Week	Date	Sec.	Material	Homework
1	Oct 11-15	9.1 9.5 9.7	Vector Functions The Directional Derivative Divergence and Curl	2,12,16,17,21,26,33,37,41 1,7,9,14,17,21,23,32,29 2,6,10,14,17,20,22,27,31
2	Oct 18-22	9.8 9.9	Line Integrals Line Integrals Independent of the Path	1,6,8,11,16,19,22,24,28,33 2,10,15,18,21,26
3	Oct 25-29	9.12 9.13	Green's Theorem Surface Integrals	1,4,6,9,18,23,25,29 1,5,10,13,18,22,25,28,33
4	Nov 01-05	9.14 9.16	Stokes' Theorem Divergence Theorem	2,3,6,8,13,17 2,4,7,11,14
5	Nov 08-12	4.1 4.2	Definition of the Laplace transform Inverse Transform, Transforms of Derivatives	2,5,14,26,30,37,42(a) 1,10,19,22,24,32,35,41
Wednesday, Nov. 12, Major Exam # 1				
6	Nov 15-19	4.3 4.4 4.5	Translation Theorems Additional Properties Dirac Delta Function	1,8,13,20,24,31,37,48,55,63 1,10,16,22,27,31,38,46,49 1,4,8,12
7	Nov 22-26	12.1 12.2	Orthogonal Functions Fourier Series	2,6,11,13,21 2,6,12,17,20
8	Nov 29-Dec 2	12.3 12.4	Fourier Cosine and Sine Series Complex Fourier Series	1,8,12,16,25,35,38 1,3,6,11
Id Al-Adha Vacation from December 03-13				
9	Dec 14 – 18 ¹	12.5	Sturm-Liouville Theorem	2,4,6,12
10	Dec 20 - 24	12.6	Bessel and Legendre Series	2,4,6,8,15,20
11	Dec 27 – 31	13.1 13.3	Separable Partial Differential Equation Heat Equation	2,8,12,16,22,26,27 2,3,6
Wednesday, December 31, Major Exam # 2				
12	Jan 03-07	13.4 13.5	Wave Equation Laplace's Equation	1,3,6,10,17 2,4,7,10,14
13	Jan 10-14	14.2 14.3	Problems in Polar and Cylindrical Coordinates Problems in Spherical Coordinates	2,4,9,12 2,5,11,12
14	Jan 17-21	15.2	Applications of the Laplace Transforms	2,4,8,10,14,18,24
15	Jan 24-28	15.3 15.4	Fourier Integral Theorem Fourier Transforms	1,4,10,18 1,6,10,12,16
16	Jan 31		Catch-up /Review	

Important Dates

Oct. 21	Last day for dropping course(s) without permanent record
Nov. 18	Last day for dropping course(s) with grade of "W" thru Internet
Dec. 18	Normal Wednesday Classes
Dec. 30	Last day for withdrawal from all courses with grade of "W" thru the Univ Registrar Office
Jan. 20	Last day for withdrawal from all courses with grade of "WP/WF" thru the University Registrar Office

- Instructors are requested to use, where ever possible, Softwares such as Mathematica, Mat lab or Maple etc during teaching.

• ¹ Normal Wednesday Classes