King Fahd University of Petroleum and Minerals
Department of Mathematical Sciences

SYLLABUS

Summer, 2005-2006(053)

Ashfaque H. Bokhari

Course #: MATH 302
Course Title: Engineering Mathematics
Textbook: Advanced Engineering Mathematics by P.O. Neil, 5th Edition (2003)

Wk	Date	Sec	Material	Homework
1	June 24-28	5.4	The vector space R^n	5, 8, 16, 19
		5.5	Linear dependence and independence	6, 14, 17, 24, 26
		6.5	Solution of homogeneous systems of linear Eqs	3, 17, 18, 20
		6.7	Non-homogeneous systems of linear equations	9 13, 15
2	July 1-5	8.1	Eigenvalues and eigenvectors	6, 16, 21
		8.2	Diagonalization	6, 7, 18
		8.3	Orthogonal and symmetric matrices	6, 12, 14
		11.1	Vector functions of one variables	6, 10, 12, 16, 18
3	July 8-12	11.4	The gradient field	6, 10, 14, 20, 22
		11.5	Divergence and curl	4, 6, 10, 12
		12.1	Line integrals	6, 12, 20, 22
		12.2	Green's theorem	2, 4, 12, 14
4	July 15-19	12.3	Independence of path and potential theory	4, 8, 12, 18
		12.4	Surface integrals	4, 8, 10, 16
		12.7	Divergence theorem of Gauss	6, 8, 10, 12, 14
		12.8	The integral theorem of Stokes	4, 6, 14, 22
5	Jul 22-26	20.1	Complex functions, limits, continuity	2, 10, 22, 28
		20.2	Loci and sets of points in the complex plane	1, 2, 6, 7, 16, 31
		21.1	Derivatives and Cauchy-Riemann equations	2, 3, 4, 5, 6, 12
6	Jul 29-Aug 2	21.2	Power series	3, 9, 11
		21.3	The exponential and trigonometric functions	2, 4, 6, 8, 11
		21.4	The complex logarithm	3, 4, 6, 8
		21.5	Powers	2, 6, 10, 14, 20, 24
7	Aug 5-9	22.1	Curves in plane	1, 3, 7, 9
		22.2	Integration of complex function	2, 5, 8, 20, 24
		22.3	The Cauchy integral theorem	3, 5, 12, 17
		22.4	Consequence of Cauchy's theorem	4, 8, 15
8	Aug 12-14	23.2	Laurent series	1, 3, 7, 12
		24.1	Singularities	3, 6, 10, 16, 18
		24.2	The residue theorem	1, 3, 5, 16, 24
		24.3,5	Evaluation of real integrals	25, 29, 31, 33

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Grading Policy

Major Exam # 01	20%
Major Exam # 02	20%
Final exam	40%
Quizzes	15%
Homework + Attendance	5%