

King Fahd University of Petroleum and Minerals
Department of Mathematical Sciences

SYLLABUS

Summer, 2005-2006 (053)

Prepared by: Dr. Hamoud Dehwah

Course #: Math 102
Title: Calculus II
Textbook: Calculus (Early Transcendentals) by Stewart, J., 5th Edition, 2002.
Objectives: To introduce definite and indefinite integrals. Fundamental Theorem of Calculus. Applications of integrations to areas, volumes, arc length and surface revolution. Techniques of integration. Improper integrals. Sequences and series: the comparison tests. Alternating series. Absolute convergence and the ratio and root tests. Power series. Taylor and Maclaurin series.

Weeks		Sections	Topics
1	June 24-28	5.1	Areas and Distances
		5.2	The Definite Integral
		5.3	The Fundamental Theorem of Calculus.
		5.4	Indefinite Integrals and the Net Change Theorem
2	July 1-5	5.5	The Substitution Rule
		5.6	The Logarithm Defined as an Integral
		6.1	Areas between Curves
		6.2	Volumes
3	July 8-12	6.3	Volumes by Cylindrical Shells
		6.5	Average Value of a Function
		Monday, July 10 2006: Suggested time for Exam I	
		7.1	Integration by Parts
		7.2	Trigonometric Integrals
4	July 15-19	7.3	Trigonometric substitution
		7.4	Integration of Rational Functions by Partial Fractions.
		7.5	Strategy for Integration
		7.8	Improper Integrals
5	July 22-26	8.1	Arc Length
		8.2	Area of a Surface of Revolution
		11.1	Sequences
		11.2	Series
6	July 29-Aug 2	Saturday, July 29 2006: Suggested time for Exam II	
		11.3	The Integral Test and Estimates of Sums
		11.4	The Comparison Tests
		11.5	Alternating Series
		11.6	Absolute Convergence and the Ratio and Root Tests
7	Aug 5-9	11.7	Strategy for Testing Series
		11.8	Power Series
		11.9	Representation of Functions as Power Series
		11.10	Taylor and MacLaurin Series
8	Aug 12-14	Review and/or catching up	

KFUPM policy with respect to attendance (lectures and recitations) will be strictly enforced

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Suggested Homework and Recitation Problems

Section	Suggested Homework Problems	Suggested Recitation Problems
5.1	3,4,11,12,16,17	
5.2	3,10,18,21,23,29,36,58,61	
5.3	7,12,16,25,32,49,51	
5.4	3,12,14,20,26,31,33,38,41,54	
5.5	4,7,12,15,22,25,32,37,42,53,58,66,70	
5.6	1,2	
6.1	1,4,8,12,20,29,44,	
6.2	1,4,10,15,19,29,32,	
6.3	1,4,9,12,15,19,21,38,42	
6.5	1,5,10,	
7.1	3,9,12,16,21,25,33,36,46,51	
7.2	4,8,13,19,26,30,38,55	
7.3	1,5,9,14,21,25,30	
7.4	1,4,8,12,18,24,27,32,39,44	
7.5	3,7,13,17,21,29,34,46,51,61,70	
7.8	5,8,14,20,24,28,33,38,40	
8.1	6,10,12,15,18,	
8.2	2,6,10,14,18	
11.1	5,9,16,19,22,25,34,39,54,58	
11.2	4,8,13,15,19,24,30,34,38,42	
11.3	3,6,9,12,16,20,24,25	
11.4	3,6,9,12,15,18,21,24,27,30,33	
11.5	2,6,9,12,14,18,24,27,33	
11.6	2,5,8,11,14,20,26,	
11.7	3,6,9,12,15,18,21,24,27,35	
11.8	4,6,9,14,18,22,25,28	
11.9	3,5,9,11,16,24,27	
11.10	4,8,11,14,16,23,27,43,56	