King Fahd University of Petroleum and Minerals
Department of Mathematical Sciences
Math 201, **Syllabus**, Semester 052
Prepared by Dr. Ibrahim Al-Rasasi

Course #: Math 201, Calculus III.

Textbook: Calculus: Early Transcendental, by Anton, Bivens and Davis, 7th edition, 2002.

Objectives: Math 201 is a natural continuation of Math 101 and Math 102. The objective of this course is to introduce students to more fundamental concepts of Calculus and analytic geometry. The topics covered in Math 201 are polar coordinates, vectors and surfaces in 3-dimensional space, differentiation of functions of several variables, multiple integrals and various applications of these topics.

Week	Date (2006)	Sec. #	Section Title (25 sections)
1	Feb. 12-15 + **Thursday**, Feb. 16	11.1 11.2	Polar Coordinates Tangent lines and arc length for parametric and polar curves
2	Feb. 18-22	11.2 11.3	Continued Area in polar coordinates
3	Feb. 25-March 1	12.1 12.2	Rectangular coordinates in 3-space Vectors
4	March 4-8	12.3 12.4	Dot product; projections Cross product
5	March 11-15	12.5 12.6	Parametric equations of lines Planes in 3-space **EXAM I, Wed., March 15, 2006**
6	March 18-22	12.6 12.7	Continued Quadric surfaces
7	March 25-29	12.7 12.8	Continued Cylindrical and Spherical coordinates
	April 1-2		**Midterm Break**
8	April 3-5	14.1 14.2	Functions of two or more variables Limits and Continuity
9	April 8-12	14.2 14.3 14.4	Continued Partial derivatives Differentiability, Local linearity and Differentials
10	April 15-19	14.4 14.5	Continued The Chain Rule **EXAM II, Wed., April 19, 2006**
11	April 22-26	14.6 14.7	Directional Derivatives and Gradients Tangent planes and normal vectors
12	April 29-May 3	14.8 14.9	Maxima and Minima of functions of two variables Lagrange Multipliers
13	May 6-10	14.9 15.1 15.2	Continued Double integrals Double integrals over nonrectangular regions
14	May 13-17	15.2 15.3	Continued Double integrals in polar coordinates
15	May 20-24	15.5 15.7	Triple integrals Triple integrals in cylindrical and spherical coordinates
16	May 27-28	15.7	Continued

NOTE: 9 unexcused absences will lead to a DN grade.

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Math 201, Semester 051
Suggested Homework Problems

Section #	Suggested Homework Problems
11.1	1(a,e), 4(a,b), 5(b), 9(b,d), 12(c,d), 30, 39, 42, 69
11.2	1, 7, 14, 26, 30, 33, 42, 51
11.3	1(e), 7, 12, 15, 22, 25, 27
12.1	5, 10, 11(b),18, 26, 34, 38
12.2	8(c), 9, 15(a,f), 18, 28, 34, 39
12.3	1(c), 8, 13(b), 14, 15(b), 22(a), 24(b), 39
12.4	3, 10, 13, 16, 21, 23(a), 27(a), 31
12.5	3(b), 6(b), 14, 17, 23, 26, 27, 30, 37
12.6	4, 11, 14(a), 15(c), 22, 25, 31, 40, 44, 46
12.7	3(b,f), 8(a), 9(d), 16, 22, 23, 30, 36, 46, 47
12.8	3(a), 6(b), 10(a), 19, 29, 41, 46
14.1	2, 18, 22, 23, 27, 34, 42, 47, 54(a)
14.2	3, 8, 12, 13, 16, 22, 23, 33, 43
14.3	3, 14, 19, 29, 57, 68, 80, 85(b)
14.4	5, 8, 19, 24, 35, 38, 45
14.5	6, 14, 23, 24, 28, 32, 39, 58, 59(a,b,c)
14.6	5, 16, 27, 29, 40, 43, 50, 60, 62
14.7	3, 8, 9(b), 19, 24, 27
14.8	9, 16, 19, 23, 28, 31, 33, 36
14.9	6, 7, 9, 12, 15, 20
15.1	12, 16, 21, 24, 25
15.2	10, 16, 21, 27, 30, 34, 49
15.3	5, 9, 16, 18, 21, 26
15.5	9, 10, 16, 19, 24(a), 31(c)
15.7	5, 6, 9, 11, 16, 20, 31