

King Fahd University of Petroleum and Minerals
 Department of Mathematical Sciences
 Math 201, **Syllabus**, Semester 053
 Prepared by Prof. M. Aslam Chaudhry

Course #: Math 201, Calculus III.

Textbook: Calculus: 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	June 24-28	11.1 11.2	Polar Coordinates Tangent lines and arc length for parametric and polar curves
continued		11.2 11.3	Continued Area in polar coordinates
2	July 01-05	12.1 12.2	Rectangular coordinates in 3-space Vectors EXAM-I, Monday July 10, 2006
continued		12.3 12.4	Dot product; projections Cross product
3	July 08-12	12.5 12.6	Parametric equations of lines Planes in 3-space
continued		12.6 12.7	Continued Quadric surfaces EXAM-II, Saturday July 29, 2006
4	July 15-19	12.7 12.8	Continued Cylindrical and Spherical coordinates
continued		14.1 14.2	Functions of two or more variables Limits and Continuity
5	July 22-26	14.2 14.3 14.4	Continued Partial derivatives Differentiability, Local linearity and Differentials
continued		14.5	The Chain Rule
6	July 29- Aug. 02	14.6 14.7	Directional Derivatives and Gradients Tangent planes and normal vectors
continued		14.8 14.9	Maxima and Minima of functions of two variables Lagrange Multipliers
7	Aug. 05-09	15.1 15.2	Double integrals Double integrals over nonrectangular regions
continued		15.2 15.3	Continued Double integrals in polar coordinates
8	Aug. 12-14	15.5 15.7	Triple integrals Triple integrals in cylindrical and spherical coordinates
continued		15.7	Continued

NOTE: 6 unexcused absences will lead to a DN grade.

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Suggested Homework Problems

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