King Fahd University of Petroleum & Minerals
Department of Mathematical Sciences
Syllabus
Math 201, Semester 061
Coordinator: Dr. Rajai Alassar
(http://faculty.kfupm.edu.sa/math/alassar/)

Course #: Math 201, Calculus III.
Textbook: Calculus: Early Transcendental, by Anton, Bivens and Davis, **7th (2002) & 8th (2005)** editions.

Wk	Date	Sec.#	Section Title
1	Sept.9-14^{+}	11.1	Polar Coordinates
		11.2	Tangent lines and arc length for parametric and polar curves
2	Sept.16-20	11.2	Continued
		11.3	Area in polar coordinates
3	Sept.24*-27	12.1	Rectangular coordinates in 3-space
		12.2	Vectors
4	Sept.30-Oct.4	12.3	Dot product; projections
		12.4	Cross product
First Major Exam: Tuesday Oct. 10, 2006		
5	Oct.7-11	12.5	Parametric equations of lines
		12.6	Planes in 3-space
Id al-Fitr Vacation		
6	Oct.28-Nov.1	12.6	Continued
		12.7	Quadric surfaces
7	Nov.4-8	12.7	Continued
		12.8	Cylindrical and Spherical coordinates
8	Nov.11-15	14.1	Functions of two or more variables
		14.2	Limits and Continuity
9	Nov.18-22	14.3	Partial derivatives
		14.4	Differentiability, Local linearity and Differentials
10	Nov.25-29	14.5	The Chain Rule
		14.6	Directional Derivatives and Gradients
11	Dec.2-6	14.7	Tangent planes and normal vectors
		14.8	Maxima and Minima of functions of two variables
Second Major Exam: Wednesday Dec. 13, 2006		
12	Dec.9-13	14.9	Lagrange Multipliers
		15.1	Double integrals
13	Dec.16-20	15.2	Double integrals over nonrectangular regions
		15.3	Double integrals in polar coordinates
Id al-Adha Vacation		
14	Jan.6-10	15.3	Continued
	(2007)	15.5	Triple integrals
15	Jan.13-17	15.7	Triple integrals in cylindrical and spherical coordinates

$^{+}$ Sept. 14 is a normal Saturday class.
* Sept. 23 is a national holiday.

Sec.#	7th Edition	8th Edition
11.1	1(a, e), 3(a, c), 5(b), 9(b, d), 12(c, d), 26, 39, 43, 69	1(a, e), 3(a, c), 5(b), 9(b, d), 12(c, d), 26, 39, 43, 77
11.2	2, 7, 14, 26, 30, 33, 42, 51	2, 7, 14, 26, 30, 33, 42, 51
11.3	1(e), 7, 12, 16, 22, 25, 27	[Quick Check Exercise 3(e)], 5, 10, 14, 20, 23, 25
12.1	5, 10, 11(b), 18, 26, 34, 38	7, 12, 13(b), 22, 30, 38, 42
12.2	8(c), 9, 15(a, f), 18, 28, 34, 39	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	1(c), 10, 12(b), 13, 15(b), 25(a), 27(b), 41
12.4	3, 10, 13, 16, 21, 23(a), 27(a), 31	3, 10, 13, 16, 21, 23(a), 27(a), 33
12.5	3(b), 6(b), 14, 17, 23, 26, 27, 30, 37	3(b), 6(b), 14, 17, 23, 26, 27, 30, 43
12.6	4, 11, 14(a), 15(c), 22, 25, 31, 40, 44, 46	4, 11, 14(a), 15(c), 22, 25, 31, 42, 46, 48
12.7	3(b, f), 8(a), 9(d), 16, 22, 23, 30, 36, 46, 47	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	3(a), 6(b), 10(a), 19, 29, 41, 46
14.1	2, 18, 22, 23, 27, 34, 42, 47, 54(a)	2, 18, 22, 23, 27, 34, 42, 47, 54(a)
14.2	3, 8, 12, 13, 16, 22, 23, 33, 43	3, 8, 12, 13, 16, 22, 23, 33, 43
14.3	3, 14, 19, 29, 57, 68, 80, 85(b)	3, 16, 21, 31, 59, 70, 80, 85(b)
14.4	5, 8, 19, 24, 35, 38, 45	1, 19, 22, 31, 36, 42, 49
14.5	6, 14, 23, 24, 28, 32, 39, 58, 59(a, b, c)	6, 18, 27, 28, 32, 36, 43, 62, 63(a, b, c)
14.6	5, 16, 27, 29, 40, 43, 50, 60, 62	5, 16, 27, 29, 40, 43, 50, 60, 62
14.7	3, 8, 9(b), 19, 24, 27	3, 8, 9(b), 19, 24, 27
14.8	9, 16, 19, 23, 28, 31, 33, 36	9, 16, 19, 23, 28, 31, 33, 36
14.9	6, 7, 9, 12, 15, 20	6, 7, 9, 12, 15, 20
15.1	12, 16, 21, 24, 25	12, 16, 20, 23, 25
15.2	10, 16, 21, 27, 30, 34, 49	10, 20, 25, 31, 34, 38, 53
15.3	5, 9, 16, 18, 21, 26	5, 9, 16, 22, 25, 30
15.5	9, 10, 16, 19, 24(a), 31(c)	9, 10, 16, 19(a or b), 26(a), 33(c)
15.7	5, 6, 9, 11, 16, 20, 31	9, 10, 13, 15, 20, 24, 35

King Fahd University of Petroleum and Minerals
Department of Mathematical Science
SYLLABUS
Semester I, 2006-2007 (061)
Prepared by Dr. Monther Rashed Alfuraidan

Course #:	Math 201
Title:	Calculus III
Textbook:	Calculus (Early Transcendentals): by James Stewart; **Fifth edition (2003)**
Course Description:	Math 201 is a continuation of Math 101 (Calculus I) and Math 102 (Calculus II). These courses are designed as an introduction to the fundamental concepts of calculus and analytic geometry. The concepts studied in Math 201 include solid analytic geometry, vectors and surfaces, differentiation of functions of several variables and multiple integrals.

Week	Date	Sec. #	Topics
1	Sep 9-14*	10.1 10.2	Curves Defined by Parametric Equations Calculus with Parametric Curves
2	Sep 16-20	10.3 10.4	Polar Coordinates Areas and Lengths in Polar Coordinates
3	Sep 24*-27	12.1 12.2	Three-Dimensional Coordinate Systems Vectors
4	Sep 30-Oct 4	12.3 12.4	The Dot Product The Cross Product
Major Exam I: Tuesday, October 10, 2006.			
5	Oct 7-11	12.5 12.6	Equations of Lines and Planes Cylinders and Quadric Surfaces
Oct. 12 -27: Eid al-Fitr Vacation			
6	Oct 28-Nov 1	12.6 12.7	Continued Cylindrical and Spherical Coordinates
7	Nov 4-8	14.1 14.2	Functions of Several Variables Limits and Continuity
8	Nov 11-15	14.3 14.4	Partial Derivatives Tangent Planes & Linear Approximation
9	Nov 18-22	14.5 14.6	The Chain Rule Directional Derivatives and the Gradient Vector
10	Nov 25-29	14.6 14.7	Continued Maximum and Minimum Values
11	Dec 2-6	14.8 15.1	Lagrange Multipliers Double Integrals over Rectangles
Major Exam II: Wednesday, December 13, 2006.			
12	Dec.9-13	15.2 15.3	Iterated Integrals Double Integrals over General Regions
13	Dec16-20	15.3 15.4	Continued Double Integrals in Polar Coordinates
Dec 21-Jan 5: Id al-Adha Vacation			
14	Jan 6-10 (2007)	15.7 15.8	Triple Integrals Integrals in Cylindrical and Spherical Coordinates
15	Jan.13-17	-	Review/ Catch up

* September 14 is a normal Saturday classes.

* September 23 is a national holiday.

▪ The dates for Major Exams I and II are set by the College of Sciences to avoid conflicts with other exams.

- The date, time and the place of the Final Examination will be announced by the Registrar. The Final Exam will be Comprehensive.
- KFUPM policy with respect to attendance (**lectures and recitations**) will be strictly enforced.

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Suggested Homework

Sec. #	Suggested Homework Problems
10.1	2,3,6,11,24,26,28
10.2	5,8,13,36,43
10.3	9,16,22,29,40,48,54
10.4	3,6,8,12,31,35,40
12.1	6,10,14,18,21,23,25,29,37,41
12.2	1,4,8,18,24,28,32
12.3	1,2,4,8,10,11,14,17,23,37,41,52
12.4	2,9,12,26,33,36,39,45
12.5	1,3,15,16,17,30,38,51,61,73
12.6	2,5,9,11,21-28
12.7	4,10,13,20,23,28,34,36,50
14.1	1,2,6,11,30,32
14.2	3,7,10,11,28,37,39
14.3	1,4,5,16,21,51,66,83
14.4	2,12,16,20,24,31
14.5	4,8,16,17,22,28,36
14.6	3,5,9,15,23,27,36,38,41,48
14.7	1,3,5,11,37
14.8	1,4,10,23,25,39
15.1	3,6,8,12,17
15.2	4,5,8,11,14,19
15.3	3,5,10,16,24,39,43,50,52
15.4	1,3,7,10,18,21,33,36
15.7	3,8,16,23,26,29,31,38
15.8	3,8,9,18,33,36

- The students are strongly urged to solve much more problems than the homework listed above.