

King Fahd University of Petroleum and Minerals
Department of Mathematical Sciences

SYLLABUS

Semester I, 2004-2005(041)
(Prepared by: Abdul Rahim Khan)

Course #: MATH 201
Title: Calculus III
Textbook: Calculus, Early Transcendentals by Anton, Bivens, and Davis, 7th edition (2002).
Objectives: 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. #	Description
1	Sep 11-15	11.1 11.2	Polar coordinates Tangent lines and arc length for parametric and polar curves
2	Sep 18-22	11.2 11.3	Continued Area in polar coordinates
3	Sep 25-29	12.1 12.2	Rectangular coordinates in 3-space Vectors
4	Oct 02-06	12.3 12.4	Dot product; projections Cross product
5	Oct 09-13	12.5 12.6	Parametric equations of lines Planes in 3-space
6	Oct 16-20	12.6 12.7	Continued Quadric surfaces First Major Exam: Sat., Oct. 16, 2004
7	Oct 23-27	12.7 12.8	Continued Cylindrical and spherical coordinates
8	Oct 30-Nov 03	14.1 14.2	Functions of two or more variables Limits and continuity
Nov. 06-19		Eid al-Fitr Vacation	
9	Nov 20-24	14.3 14.4	Partial derivatives Differentiability, local linearity, and differentials
10	Nov 27-Dec 01	14.5 14.6	The chain rule Directional derivatives and gradients
11	Dec 04-08	14.7 14.8	Tangent planes and normal vectors Maxima and minima of functions of two variables Second Major Exam: Sat., Dec. 04, 2004
12	Dec 11-15	14.8 14.9	Continued Lagrange multipliers
13	Dec 18-22	15.1 15.2	Double integrals Double integrals over nonrectangular regions
14	Dec 25-29	15.3 15.5	Double integrals in polar coordinates Triple integrals
15	Jan 01-03	15.7	Triple integrals in cylindrical and spherical coordinates Review and catching up

- KFUPM policy with respect to attendance will be enforced.
- Thursday, September 30 is a normal Wednesday class in lieu of Wednesday, January 5, 2005.
- Final Exam: Comprehensive.

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A Minimal Set of Homework Problems
MATH 201 (041)

Section	Homework
11.1	3c, 8b, 12c, 25, 34, 50, 59
11.2	5, 13, 24, 29, 36, 40, 52
11.3	4, 7, 14, 18, 22, 28
12.1	5, 10, 16, 19, 21b, 32, 39
12.2	3d, 5b, 8c, 10b, 12e, 15d, 18b, 22, 28, 36, 58
12.3	4, 11b, 16a, 22b, 34, 40, 42
12.4	4, 9, 12, 14, 18, 22, 27, 32, 39
12.5	6, 12, 14, 18, 24, 29, 34, 40, 46
12.6	9, 14c, 16b, 22, 24, 29, 32, 39, 44, 47
12.7	2d, 4d, 5c, 8b, 9f, 14, 20, 31, 35, 44
12.8	3c, 6b, 8d, 12c, 18, 28, 36, 41, 48
14.1	5, 10, 14, 18b, 22, 23c, 29, 43, 46, 50, 53c
14.2	4, 8b, 11, 17, 22, 27b, 30, 32, 35, 42
14.3	7, 12, 22, 24, 30, 34, 42, 51, 58, 62, 66, 84
14.4	9, 12, 16, 18, 29, 34, 40, 48, 50
14.5	10, 14, 18, 23, 27, 34, 39, 49c, 51b, 54, 61
14.6	8, 11, 20, 24, 27, 34, 39, 44, 46, 53, 58, 73
14.7	8, 12, 16c, 19, 24, 28, 30
14.8	2b, 15, 20, 24, 28, 34, 37, 43
14.9	7, 12, 16, 20, 23, 28, 30
15.1	12, 15, 22, 24, 28, 34
15.2	7, 12a, 14, 18, 21, 26, 29, 33, 45, 50, 52
15.3	9, 15, 20, 24, 27, 33, 35, 40
15.5	6, 8, 12, 16, 21, 23c, 31b, 35b
15.7	8, 12, 16, 19, 31