King Fahd University of Petroleum and Minerals
Department of Mathematical Sciences

Math 101 – Syllabus

2006-2007(062)
Course Coordinator: Dr. A. Al-Shuaibi

Title: Calculus I

Credit: 4-0-4

Textbook: Calculus (Early Transcendentals), by J. Stewart, 5th edition, Thomson, 2003

Grading Policy

1. Major Exam I: 25%, a common multiple choice exam. It will be on Wednesday, March 21, 2007.
2. Major Exam II: 25%, a written exam. Each instructor will prepare an exam for his students. It will be on Wednesday, April 25, 2007. The dates of the major exams are selected by the College of Sciences to avoid conflict with exams of other courses.
3. Class Work: 15%
    a. Quizzes, HW, … or any other activities determined by the instructor. Any quiz or test under class activity will be of written type and **not** multiple choice type.
    b. At least two quizzes should be given before Major Exam I.
4. Final Exam: 35%, a comprehensive common multiple choice exam. It will be on Sunday, June 10, 2007 at 7:00 P.M.

Major I	25%	Common Multiple Choice Exam	Wednesday, March 21, 2007.
Major II	25%	Written Exam	Wednesday, April 25, 2007
5 Quizzes	15%	In Class Quizzes (3points each)	
Final Exam	35%	Common Multiple Choice Exam	Sunday, June 10, 2007 at 7:00 P.M.
Total	**100%**		

Exam II and Class Work Average. If X is the average out of 100 of a section in Exam I, then the average Y out of 100 of the same section in Exam II and class-work must lie in the interval [X, X+10].

Exam Questions: The questions of the common exams are based on the examples, homework problems, recitation problems and the exercises of your textbook.

Attendance: A DN grade will be awarded to any student who accumulates 12 unexcused absences (lecture and recitation).

Academic Integrity: All KFUPM policies regarding ethics apply to this course.

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Title : Calculus I

Textbook : Calculus (Early Transcendentals): by J. Stewart; 5th edition, 2003

Objectives : To introduce the student to basic concepts and methods of Calculus. Topics include: Limits and continuity of functions of a single variable. Differentiability. Exponential, Logarithmic, Hyperbolic, trigonometric and inverse trigonometric functions. Applications: Related rates, Local linear approximation, Differentials, Curve sketching and Applied optimization problems.

Week	Date	Sec.	Topics
1	Feb 17-21	2.1 2.2	The Tangent Problem: **Example1**. The Limit of a Function
2	Feb 24-28	2.3 2.4	Calculating Limits Using the Limit Laws The Precise Definition of a Limit: Examples 1,2, and 3
3	Mar 03-07	2.5 2.6	Continuity Limits at Infinity; Horizontal Asymptotes
4	Mar 10-14	2.7 2.8	Tangents, Velocities, and Other Rates of Change Derivatives
5	Mar 17-21	2.9	The Derivative as a Function
Exam I (25%) (Ch.2) (MCQ): Wednesday, March 21, 2007			
6	Mar 24-28	3.1 3.2 3.3	Derivatives of Polynomials and Exponential Functions The Product and Quotient Rules Rate of Change in Physics: **Example 1**.
7	Mar 31 – Apr 04	3.4 3.5	Derivatives of Trigonometric Functions The Chain Rule
8	Apr 07-11	3.6 3.7	Implicit Differentiation Higher Derivatives
Mid-Term Break: Thursday, April 12 to Sunday, April 15, 2007			
9	Apr 16-18	3.8	Derivatives of Logarithmic Functions
10	Apr 21-25	3.9	Hyperbolic Functions
Major Exam II (25%) (3.1-3.9) (Written): Wednesday, April 25, 2007			
11	Apr 28-May 02	3.10 3.11	Related Rates Linear Approximations and Differentials
12	May 05-09	4.1 4.2	Maximum and Minimum Values The Mean Value Theorem
13	May 12-16	4.3 4.4	How Derivatives Affect the Shape of a Graph Indeterminate Forms and L'Hospital's Rule
14	May 19-23	4.5 4.7	Summary of Curve Sketching Optimization Problems
15	May 26-30	4.9 4.10	Newton's Method Antiderivatives
16	June 02-03		**Review**
Final Exam (35%) (Comprehensive) (MCQ): Sunday, June 10, 2007 at 7:00 P.M.			

Homework and Recitation Problems are in the back sheet.

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Math 101
Homework & Recitation Problems

Section	Homework	Recitation	CAS*
2.2	6,7,9,14,17,27,30,34,35,38	4,13,28,32	-
2.3	2,7,15,18,19,21,26,29,37,41,42,49,56,58	10,14,22,38,50	-
2.4	3,5,15,20,24	4,6,21	-
2.5	3,7,11,12,15,16,19,29,34,39,42,51,52,59,60	10,18,24,43,46,54	30
2.6	1,3,5,8,12,19,24,26,29,34,37,42,47,49	4,18,,22,46,49,53	-
2.7	2,6,8,15,18,19,20,24	10,12,25	-
2.8	3,4,8,10,15,18,19,22,24,26,30,35	1,6,17,21,28	-
2.9	2,4,8,10,13,16,20,22,27,45	3,11,18,30,33,43	-
3.1	1(b),23,30,36,40,41,46,47,50,56	33,42,45,52,55	-
3.2	5,9,10,15,17,18,21,26,32,36,37	31,35,38	-
3.4	3,10,15,18,24,25,28,30,33,41,45	7,23,26,42	-
3.5	3,9,11,18,27,31,39,40,46,49,52,55(a),58,63(a)	14,42,45,54,63(d)	74
3.6	1,11,14,19,20,22,24,25,42,46,55,56	10,15,21,28,59	-
3.7	2,8,15,26,32,33,36,40,44,54,60	3,31,37,38,47,61	-
3.8	3,4,6,8,17,22,25,30,31,37,41,48,50	12,19,24,28,32,46,49	-
3.9	3,4,14,17,20,23,29(d),34,37,43,51,53	6,19,29(b),46,49,52	-
3.10	4,5,8,9,12,18,21,25,37,38	1,6,11,15,33	-
3.11	6,8,17,26,28,35,38,43,45,49	7,36,42,50	40
4.1	4,8,10,25,30,42,44,50,58,69	14,38,40,70	-
4.2	4,6,12,14,18,24,26,28	2,5,16,20,27,29	-
4.3	1,6,8,16,18,20,44,46,74	36,50,64	58
4.4	2,4,14,22,24,19,48,58,68	13,21,30,42,50	-
4.5	19,26,30,34,37,47,50,52,64,69	22,36,65,68	-
4.7	6,10,12,27,33,35,44,52,55,56	22,46,57,61(a)	-
4.9	5,11,35(a)	7,12,31	-
4.10	14,38,42,46,48	40,45,49,62	-

* CAS problems require the use of a technology tool (e.g., graphing calculators or computers). You are encouraged to do these problems in order to enhance your understanding of the concepts involved.

Tips on how to enhance your problem-solving abilities:

1. Please do all the homework assignments on time.
2. You are urged to practice (but not memorize) more problems than the above lists.
3. You should always try to solve a problem on your own before reading the solution or asking for help.
4. If you find it difficult to handle a certain type of problems, you should try more problems of that type.
5. You should try the recitation problems before coming to class.
6. You are encouraged to solve some of the review problems at the end of each chapter.
7. The practice you get doing homework and reviewing the class lectures and recitations will make exam problems easier to tackle.
8. Try to make good use of the office hours of your instructor.