King Fahd University of Petroleum and Minerals
Department of Mathematical Sciences
2006-2007 (061)

Math 101 – Common Policy

Coordination

Math 101 is a multiple-section course. The Course is fully coordinated in order to ensure comparability of objectives, quality, substance and grading. The coordination is carried out by a committee of math faculty members appointed by the chairman of the math department. It takes effect in the following sense:

- The syllabus, homework, recitations, and exams will be the same for all sections.
- The final letter grades will be curved for all sections during a deliberation of the committee.
- The other clauses of this policy apply to all sections.

Exams

- There are three (3) major exams and one (1) final exam. The format consists of multiple choice questions only. The final exam is comprehensive.
- Exam questions range over varying levels of depth and difficulty and cover different types. They are similar in type and difficulty to those of the textbook. Some (but not all) of them may be similar in form and content to those listed in the homework and recitation sheet.
- No makeup exam will be given under any circumstance. When you miss an exam for a legitimate reason (such as medical emergencies with official confirmation) your grade for that exam will be determined based on your final exam grade.
- The use of books, cell phones, calculators or notes of any sort is not permitted in any of the exams.

Homework

The graded homework sets comprise only a small part of the assigned homework. Twenty-four (24) homework sets should be turned in for grading. The four (4) lowest homework grades will be dropped (including zeros in case of missed homework sets).

Grading Policy & Exam Format

Exam	Duration	# Questions	Score
Major Exam 1	1h30mn	15	100
Major Exam 2	1h30mn	15	100
Major Exam 3	1h30mn	15	100
Final Exam	2h30mn	25	175
Homework	-	-	25
		TOTAL	**500**

Exam Questions Attributes

Reference	Percentage
Recitation	15 %
Graded Homework	15 %
Homework	30 %
Book	40 %

Attendance

Full class attendance is requested. DN policy will be adopted according to KFUPM regulations from a total of (12) absences in lectures & recitation sessions.

Academic Integrity

All KFUPM policies regarding ethics apply to this course.

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Math 101 - Syllabus

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 and inverse trigonometric functions. Applications: Related rates, Local linear approximation, Differentials, Curve sketching and Applied optimization problems.

Week	Date	Sec.	Topics
1	Sept. 09-14*	2.1	The Tangent Problem: **Example1**.
		2.2	The Limit of a Function
		2.3	Calculating Limits Using the Limit Laws
2	Sept. 16-20	2.3	Calculating Limits Using the Limit Laws
		2.4	The Precise Definition of a Limit I
Saturday, September 23: National Holiday		
3	Sept. 24-27	2.5	Continuity
4	Sept. 30-Oct. 04	2.6	Limits at Infinity; Horizontal Asymptotes
		2.7	Tangents, Velocities, and Other Rates of Change
5	Oct. 07-11	2.8	Derivatives
		2.9	The Derivative as a Function
		3.1	Derivatives of Polynomials and Exponential Functions
Exam 1: Sunday, October 8 (Material: 2.1$\rightarrow$2.8)		
Eid Al-Fitr Vacation		
6	Oct. 28-Nov. 01	3.2	The Product and Quotient Rules
		3.3	Rate of Change in Physics: **Example 1**.
		3.4	Derivatives of Trigonometric Functions
7	Nov. 04-08	3.5	The Chain Rule
		3.6	Implicit Differentiation I
8	Nov. 11-15	3.6	Implicit Differentiation II
		3.7	Higher Derivatives
9	Nov. 18-22	3.8	Derivatives of Logarithmic Functions
		3.9	Hyperbolic Functions
10	Nov. 25-29	3.10	Related Rates
		3.11	Linear Approximations and Differentials I
Exam 2: Tuesday, November 28 (Material: 2.9$\rightarrow$3.9)		
11	Dec. 02-06	3.11	Linear Approximations and Differentials II
		4.1	Maximum and Minimum Values
12	Dec. 09-13	4.2	The Mean Value Theorem
		4.3	How Derivatives Affect the Shape of a Graph
13	Dec. 16-20	4.4	Indeterminate Forms and L'Hospital's Rule
		4.5	Summary of Curve Sketching
Eid Al-Adha Vacation		
14	Jan. 06-10	4.7	Optimization Problems
Exam 3: Wednesday, January 10 (Material: 3.10$\rightarrow$4.7)		
15	Jan. 13-17	4.9	Newton's Method
		4.10	Antiderivatives
Final: Wednesday, January 24 – 7:00 p.m.		

* Thursday, September 14, 2006: Normal Saturday Classes.

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Math 101
Homework & Recitation Problems

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

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