

**King Fahd University of Petroleum and Minerals**  
**Department of Mathematics & Statistics**  
**Math 101 – Syllabus**  
**2009-2010 (091)**  
**Coordinator: Dr. A. Shawky Ibrahim**

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**Title:** Calculus I  
**Credit:** 4-0-4  
**Textbook:** Calculus (Early Transcendentals), by J. Stewart, 6<sup>th</sup> edition, Brooks/Cole, 2008.

**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.

**Grading Policy**

1. Exam I: 25% (100 points) (Monday Nov.02, 2009). A **common written exam**.  
Material: 2.1-2.7.
2. Exam II: 25 % ( 100points) (Monday Dec.21, 2009).A **common multiple choice exam**. Material: 2.8-3.9
3. Class Work: 15% (60 points). It is based on quizzes (around 5 quizzes), homework, or other class activities determined by the instructor. Any quiz or test under class activity should be of written type and not of multiple choice types.
4. Final Exam: 35% (140 points), a **comprehensive common multiple choice exam**. (Saturday January 30, 2010 at 7:30 AM)

**Class Work Average.** The average (x out of 60) of the Class Work of the sections taught by the same instructor should be in the interval [36, 45].

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

**Missing one of the Two Common Major Exams I or II:** No makeup exam will be given under any circumstance. When a student misses Exam I or Exam II for a legitimate reason (such as medical emergencies), his grade for this exam will be determined based on the existing formula which depends on his performance in the non-missing exam and in the final exam.

**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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2009-2010 (091)

Calculus (Early Transcendentals), by J. Stewart, 6<sup>th</sup> edition, Brooks/Cole, 2008.

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Week	Date	Sec.	Topics
1	Oct 3-7, 2009	2.1 2.2	The Tangent Problem: <b>Example1.</b> The Limit of a Function
2	Oct 10-14	2.3 2.4	Calculating Limits Using the Limit Laws The Precise Definition of a Limit: Examples 1, and 2
3	Oct 17-21	2.5 2.6	Continuity Limits at Infinity; Horizontal Asymptotes
4	Oct 24-28	2.7 2.8	Derivative and Rates of Change The Derivative as a Function
<b>Major Exam I : Monday November 2,2009 .Material:2.1-2.7</b>			
5	Oct 31-Nov 4	2.8 3.1	Continued Derivatives of Polynomials and Exponential Functions
6	Nov 7-11	3.2 3.3	The Product and Quotient Rules Derivatives of Trigonometric Functions
7	Nov 14-18	3.4 3.5	The Chain Rule Implicit Differentiation
8	Dec 5-9	3.6 3.7	Derivatives of Logarithmic Functions Rates of Change (Example 1 only)
<b>Eid Al-Adha Break: Thursday Nov 19, 2009 to Friday, Dec. 4, 2009</b>			
9	Dec 12-16	3.9 3.10	Related Rates Linear Approximations and Differentials
<b>Major Exam II: Monday December 21, 2009.Material:2.8-3.9</b>			
10	Dec 19-23	3.10 3.11	Continued Hyperbolic Function
11	Dec 26- 30	4.1 4.2	Maximum and Minimum Values The Mean Value Theorem
12	Jan 2-6,2010	4.3 4.4	How Derivatives Affect the Shape of a Graph Indeterminate Forms and L'Hospital's Rule
13	Jan 9 -13	4.4 4.5	Continued Summary of Curve Sketching
14	Jan 16-20	4.7 4.9	Optimization Problems Newton's Method
15	Jan 23-27	4.10	Antiderivatives Review/Catching up
<b>Final Exam :Saturday January 30,2010(7:30 AM) A Comprehensive Multiple Choice Exam.</b>			