King Fahd University of Petroleum and Minerals
Department of Mathematical Science

SYLLABUS: MATH 101, Semester I, 2005-2006 (051)

Dr. M. Samman

Course #: Math 101

Title: Calculus I

Textbook: Calculus (Early Transcendentals): by H. Anton, I. Bivens, and S. Davis; 8th edition (2005)

Objectives: To introduce the student to basic concepts and methods of Calculus. Topics include: Limits and continuity. The Derivative. Exponential, logarithmic and inverse trigonometric functions. Applications: Related rates, Local linear approximation, Differentials, Graphing and Applied optimization problems.

Weeks	Dates	Secs.	Topics
1	Sept 10-14	2.1	Limits (An Intuitive Approach)
2	Sept 17-21	2.2 2.3	Computing Limits Computing Limits (End Behavior)
3	Sept **25***-28	2.4 2.5	Limits (Discussed More Rigorously) Continuity
Class Test I: Monday, October 03, 2005, 12:00-12:50 pm. Material: 2.1-2.5 (10%)			
4	Oct 01-05	2.6 3.1	Limits and Continuity of Trigonometric Functions Slopes and Rates of Change
5	Oct 08-12	3.2	The Derivative
6	Oct 15-19	3.3 3.4	Techniques of Differentiation Derivatives of Trigonometric Functions
7	Oct 22-26	3.5 3.6	The Chain Rule Implicit Differentiation
Eid Al-Fitr Vacation			
8	Nov 12-16	3.7 3.8	Related Rates Local Linear Approximation; Differentials
9	Nov 19-23	4.1 4.2	Inverse Functions Exponential and Logarithmic Functions
Exam II: Sunday, November 27, 2005, 5:15-7:00pm. Material: 2.1-3.8 (20%)			
10	Nov 26-30	4.3	Derivatives of Logarithmic and Exponential Functions
11	Dec 03-07	4.4 4.5	Inverse Trigonometric Functions and Their Derivatives L'Hopital's Rule; Indeterminate Forms
12	Dec 10-14	5.1 5.2	Analysis of Functions I: Increase, Decrease and Concavity Analysis of Functions II: Relative Extrema; First and Second Derivative Tests
13	Dec 17-21	5.3 5.4	Analysis of Functions III: Applying Technology and the Tools of Calculus Rectilinear Motion (Motion Along a Line)
14	Dec 24-28	5.5 5.6	Absolute Maxima and Minima Applied Maximum and Minimum Problems (Optimization)
15	Dec 31-Jan 04	5.7 5.8	Newton's Method Rolle's Theorem; Mean-Value Theorem
Eid Al-Adha Vacation			
16	Jan 21		Review
Final Exam: Comprehensive (35%)			

* Saturday, Sept 24 : National Day Break.

- The date, time and the place of the Final Examination will be announced by the Registrar. The Final Exam is Comprehensive.
- Attendance is compulsory. KFUPM policy with respect to attendance will be strictly enforced.
- For details about Homework and Recitation Problems, **CAS** Assignments and Evaluation Policy, see the WebCT. Also you may see my home page: http://faculty.kfupm.edu.sa/math/msamman/.