

King Fahd University of Petroleum and Minerals
 Department of Mathematical Science
SYLLABUS
 Semester 043(Al-Labadi, L.)

Course #: Math 101
Title: Calculus I
Textbook: Calculus (Early Transcendentals) by H. Anton, I. Bivens, and S. Davis, seventh edition (2002)
Objectives: Introduce the student to the basic concepts and methods in calculus. Topics covered include: Limits and continuity, the derivative, exponential, logarithmic and inverse trigonometric functions; applications of the derivative in related rates, local linear approximation, differentials, graphing and optimization problems.

Week(s)	Dates	Sec.	Topics
1	July 2-6	2.1 2.2 2.3	Limits (Tentative Approach) Computing Limits Computing Limits (End Behavior)
2	July 9-13	2.4 2.5 2.6	Limits (Discussed more rigorously) Continuity Limits and Continuity of Trigonometric Functions
Major Exam I : Saturday, 16-7-2005			
3	July 16-20	3.1 3.2 3.3 3.4	Slopes and Rates of Change The Derivative Techniques of Differentiation Derivatives of Trigonometric Functions
4	July 23-27	3.5 3.6 3.7 3.8	The Chain Rule Implicit Differentiation Related Rates Local Linear Approximations, Differentials
Major Exam II : Saturday, 30-7-2005			
5	July 30- August 3	4.1 4.2 4.3	Inverse Functions Exponential and Logarithmic Functions Derivatives of Logarithmic and Exponential Functions
6	August 6-10	4.4 4.5 5.1 5.2	Inverse Trigonometric Functions and Their Derivatives L'Hopital's Rule; Indeterminate Forms Analysis of Functions I: Increase, Decrease, and Concavity Analysis of Functions II: Relative Extrema; First and Second Derivative Tests
Major Exam III : Saturday, 13-8-2005			
7	August 13-17	5.3 5.4 5.5 5.6	Analysis of Functions III: Applying Technology and the Tools of Calculus Rectilinear Motion Absolute Maxima and Minima Applied Maximum and Minimum Problems
8	August 20-22	5.7 5.8	Newton's Method Rolle's Theorem; Mean-value Theorem

- The date and place of the Final Examination will be announced by the Registrar. The Final Exam is Comprehensive.
- KFUPM policy with respect to attendance will be enforced.
- For details about Homework and Recitation Problems, see the following page.

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 Department of Mathematical Sciences
 Math 101, Semester 043

Homework and Recitation Problems

Secs.	Homework Problems	Recitation Problems
2.1	2, 8, 14, 16, 28	5, 10, 13, 18, 31,32
2.2	4, 14, 34, 36, 40	2, 8, 10, 18, 33
2.3	8, 16, 24, 30, 34	4, 14, 18, 32, 38
2.4	12, 16, 26, 28, 30	10, 14, 29, 32
2.5	20, 22, 24, 30, 44	17, 25, 29, 34, 42
2.6	20, 28, 40, 42,46	14, 18 , 31 , 41, 44
3.1	2, 10, 14, 16, 20	8, 13, 17, 18, 21
3.2	4, 14, 26, 42, 48	3, 13, 41, 43, 49
3.3	14, 28, 40, 60, 76	25, 43, 59, 66, 79
3.4	10, 18, 22, 28, 38	6, 17, 25, 29, 37
3.5	24, 46, 56, 68, 74	10, 26, 50, 54, 67
3.6	18, 28, 36, 40, 50	22, 27, 41, 48, 49
3.7	14, 24, 26, 34, 42	7, 10, 25, 37, 40
3.8	18, 28, 32, 48, 54	18, 24, 42, 46, 50
4.1	24, 34, 38, 48, 50	12, 18, 35, 39, 46
4.2	12, 24, 32, 36, 58	11, 21, 22, 34, 57
4.3	16, 38, 46, 50, 58	18, 34, 45, 49, 57
4.4	18, 24, 30, 40, 44	16, 26, 32, 41, 43
4.5	16, 38, 40, 50, 54	18, 28, 36, 52, 59
5.1	16, 18, 22, 24, 36	17, 21, 23, 26, 35
5.2	12, 20, 24, 32, 38	11, 19, 23, 37, 53
5.3	34, 48, 56, 62, 70	26, 31, 45, 57, 71
5.4	12, 18, 24, 30, 38	11, 20, 23, 27, 37
5.5	14, 34, 40, 44, 50	13, 22, 37, 38, 41
5.6	20, 28, 38, 50, 56	17, 27, 35, 49, 55
5.7	2, 8, 12, 22, 28	3, 11, 21, 27
5.8	16, 28, 36, 40, 44	14, 20, 26, 39, 45

- The Suggested Homework and Recitation Problems are considered as a minimum set of problems. Students are encouraged to solve as many problems as they can from the list of the problems at the end of each required section.