

King Fahd University of Petroleum and Minerals
 Department of Mathematical Science
SYLLABUS
 Summer, 2002-2003(023)
 (Mr. Samer Maslamani)

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 1-2	2.1	Limits (Tentative Approach)
2	July 5-9	2.2 2.3 2.4 2.5	Computing Limits Computing Limits (End Behavior) Limits (Discussed more rigorously) Continuity
3	July 12-16	2.6 3.1 3.2 3.3	Limits and Continuity of Trigonometric Functions Slopes and Rates of Change The Derivative Techniques of Differentiation
Saturday, July 19, 2003: Suggested Time for Major Exam I			
4	July 19-23	3.4 3.5 3.6 3.7	Derivatives of Trigonometric Functions The Chain Rule Implicit Differentiation Related Rates
5	July 26-30	3.8 4.1 4.2 4.3	Local Linear Approximations, Differentials Inverse Functions Exponential and Logarithmic Functions Derivatives of Logarithmic and Exponential Functions
6	August 2-6	4.4 4.5 5.1	Inverse Trigonometric Functions and Their Derivatives L'Hopital's Rule; Indeterminate Forms Analysis of Functions I: Increase, Decrease, and Concavity
Tuesday, August 5, 2003: Suggested Time for Major Exam II			
7	August 9-13	5.2 5.3 5.4 5.5	Analysis of Functions II: Relative Extrema; First and Second Derivative Tests Analysis of Functions III: Applying Technology and the Tools of Calculus Rectilinear Motion Absolute Maxima and Minima
8	August 16-20	5.6 5.7 5.8	Applied Maximum and Minimum Problems Newton's Method Rolle's Theorem; Mean-value Theorem Review

- The date and place of the final examination will be announced by the Registrar. The final exam is usually Comprehensive.
- KFUPM policy with respect to attendance will be enforced.

For Suggested Homework and Recitation Problems, please turn over. →

King Fahd University of Petroleum and Minerals
 Department of Mathematical Sciences
 Math 101, Semester 023

Homework and Recitation Problems

Sec.	Suggested Homework Problems	Suggested Recitation Problems
2.1	2, 10, 14, 16, 18, 32	5, 8, 15, 31
2.2	4(b, g), 14, 18, 26, 34, 37(b), 40	4(c, d), 13, 30, 36, 37(a), 41
2.3	7, 12, 19, 29, 34, 35	15, 16, 26, 37, 40
2.4	2(c), 4, 12, 22, 30, 38, 58	3, 11, 15, 21, 27, 42, 57
2.5	9(b,d), 18, 20, 22, 25(b), 28, 30(a,b), 34, 38, 42	10, 19, 23, 29(c), 39
2.6	4, 10, 18, 22, 23, 26, 41, 44, 48	19, 27, 34, 45, 47
3.1	2, 10, 14, 20	3, 8, 12, 19
3.2	4, 14, 16, 26, 42, 44, 46, 48	23, 27(b), 30, 45
3.3	12, 18, 20, 22, 28, 30, 44, 46(a,c), 49(c), 52, 54, 62	23, 27, 40, 47(a), 49(c), 63
3.4	10, 17, 22, 27(b), 36, 37(h)	5, 13, 29(c) 32, 40, 41
3.5	6(a), 10, 22, 26, 40, 46, 54, 62, 68	13, 20, 35, 57, 65, 67, 71
3.6	2, 14, 20, 24, 30, 38, 43, 48(a)	5, 13, 21, 31, 41, 48(b)
3.7	8, 12, 16, 24, 25, 32, 40	10, 14, 41
3.8	4, 6, 12, 18, 30, 36, 40(b), 42, 46, 52	28, 31, 35, 39(a), 44
4.1	12, 22, 24, 28, 32, 37, 40, 46, 50	11, 20, 29, 47, 53
4.2	6, 10, 12, 14, 20, 24, 36, 40, 48, 58	5, 9, 11, 15, 23, 30, 32, 35, 45, 57
4.3	4, 8, 16, 22, 28, 32, 34, 38, 42, 46, 50(a), 57(a)	7, 14, 25, 29, 37, 45, 50(b)
4.4	8(c), 12(c), 24, 26, 28	7(c), 23, 25, 29, 30
4.5	8, 12, 14, 18, 22, 26, 34, 50(a)	9, 17, 19, 27, 35, 50(c)
5.1	2(a,c), 4, 10, 16, 21, 24, 26, 34(c)	3, 6, 7, 15, 23, 25, 34(a)
5.2	2(a,d), 6, 10, 12, 16, 18(a), 28, 35, 36, 40	3(b,c), 4(a), 8, 11, 13, 19(c), 37, 39
5.3	8, 20, 22, 24, 34, 42, 44, 52, 56, 61(b), 68	9, 21, 33, 40, 46, 57, 61(c), 72
5.4	12, 18, 23	14, 19, 27
5.5	8, 10, 12, 18, 25, 30, 34, 40, 41	11, 14, 21, 33, 37, 43
5.6	8, 21, 26, 36, 50, 56	11, 17, 24, 33, 54
5.7	2, 8, 23	7, 27
5.8	4, 8, 12, 20, 28, 31, 32(a,b), 46	5, 7, 13, 19, 27, 33

- ❖ 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.