King Fahd University of Petroleum and Minerals
Department of Mathematical Science
SYLLABUS
Semester II, 2005-2006 (052)
(Coordinator: Dr. M. T. Mustafa)

For 7th edition

Course #: Math 102
Title: Calculus II
Textbook: Calculus (Early Transcendentals): by H. Anton, I. Bivens, and S. Davis; **Seventh edition (2002)**
Course Description: Definite and indefinite integrals. Fundamental Theorem of Calculus. Techniques of integration. Hyperbolic functions. Applications of integration. Improper integrals. Sequences and series: convergence tests. Alternating series. Absolute and conditional convergence. Power series. Taylor and Maclaurin series.

Week	Date	Sec. #	Topics
1	Feb 12-16*	6.1 6.2	An Overview of the Area Problem The Indefinite Integral: Integral Curves
2	Feb 18-22	6.3 6.4	Integration by Substitution Sigma Notation: Area as a Limit
3	Feb 25-Mar 1	6.5 6.6	The Definite Integral The Fundamental Theorem of Calculus
4	Mar 4-8	6.7 6.8 6.9	Average Value (pp. 434-435 only) Evaluating Definite Integrals by Substitution Logarithmic Functions from the Integral Point of View
5	Mar 11-15	7.1 7.2	Area Between Two Curves Volumes by Slicing: Disks and Washers
Suggested Date for Major Exam I: Wednesday, March 22, 2006.			
6	Mar 18-22	7.3 7.4	Volumes by Cylindrical Shells Length of a Plane Curve
7	Mar 25-29	7.5 7.8	Area of a Surface of Revolution Hyperbolic Functions and Hanging Cables(pp. 509-513 only)
Midterm Break: April 1-2, 2006			
8	Apr 3-5	8.2 8.3	Integration by Parts Trigonometric Integrals
9	Apr 8-12	8.4 8.5	Trigonometric Substitutions Integrating Rational Functions by Partial Fractions
10	Apr 15-19	8.6 8.8	Special Substitutions (pp. 558-560 only) Improper Integrals
Suggested Date for Major Exam II: Wednesday, April 26, 2006.			
11	Apr 22-26	10.2 10.3	Sequences Monotone Sequences
12	Apr 29-May 3	10.4 10.5	Infinite Series Convergence Tests
13	May 6-10	10.6 10.7	The Comparison, Ratio and Root Tests Alternating Series; Conditional Convergence
14	May 13-17	**10.1** 10.8	Maclaurin and Taylor Polynomial Approx. (till p. 644) Maclaurin and Taylor Series; Power Series
15	May 20-24	10.9 10.10	The Binomial Series & Table 10.9.1 (pp. 707-708 only) Differentiating and Integrating Power Series
16	May 27-28		Review

* Normal Saturday classes on February 16.

- Students are advised to go over Sec. 8.1 before the start of Chapter 8.
- The Suggested dates for Major Exams I and II are set by the College of Sciences to avoid conflicts with other exams.
- The date, time and the place of the Final Examination will be announced by the Registrar. The Final Exam will be Comprehensive.
- KFUPM policy with respect to attendance (**lectures and recitations**) will be strictly enforced.
- See the following page for "Homework and Recitation Problems".

King Fahd University of Petroleum and Minerals
Department of Mathematical Sciences
Math 102, Semester 052

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Suggested Homework and Recitation Problems

Sec. #	Suggested Homework Problems	Suggested Recitation Problems
6.1	2,,11,16	6,14,18
6.2	8(a,b),13,18,23,29,32,34,44,48,54	7(c),25,27,33,42(b,c),46,49,55(b)
6.3	4,12,18,25,26,30,42,47,52,54(a,b)	6,15,23,40,48,67
6.4	2(a,b,e),7,10(b,c),12,18,24,30,42,54	10(a,d),15,20,26,44,49,55(a)
6.5	2,6,10(b),16(c),20,22(a),24(b),28	4,8,14,19,22(b),26,32
6.6	4,13,22,24,31,39,50,54,60(a)	8,23,26,32,41,55,61
6.7	57,60	59
6.8	4,9,17,20,28,38,45,55,70(a)	12,15,21,26,50,69
6.9	2,4(b,c),10,12,18,25,32,42	3(a,b),16,22(b),39
7.1	3,8,13,18,31,44	6,14,32,36
7.2	4,12,14,23,30,31,37	9,25,29,32,39
7.3	2,6,16,21,28	4,8,24
7.4	8,10,14	4,12
7.5	2,7,18,21,24	8,23,25
7.8	4,5(a),12,17,32,37,50	3,16,33,38,67
8.2	2,7,14,18,23,28,38,41(a),46,54(a)	12,21,24,27,36,41(b),58(a)
8.3	8,11,14,19,30,41,51,61	15,32,44,50,64
8.4	2,10,14,24,41,44	8,20,42,45
8.5	3,11,21,32,34	12,30,33,41
8.6	56,61,68,72	62,64,70
8.8	1,6,9,16,18,26,31,43,52,63	4,15,24,33,62
10.2	2,6,10,11,20,21,26,30,37,40	8,12,16,22,36,39
10.3	5,10,15,23	11,17,22,27
10.4	2,5,8,13,17,23(a),24(c),25(a),27	9,14,20,23(b),25(b),26,30
10.5	2,4,5(a,d),7(b),12,22,25,29(a,b)	3(b),5(d),9,14,19,21,29(c)
10.6	3(a),4(a),9,12,17,29,32,38,43	3(b),6,16,20,28,40,42
10.7	5,9,14,22,26,33,46	6,12,17,30
10.1	3,10,14,22,24,25,34	11,12,18,21,26,35
10.8	2,5,16,17,22,23,29,30,35,44,47,53	10,18,20,28,38,48
10.9	17(b,c)	17(a)
10.10	2(c,d),6(d),7(a),9(b),11,15,25,28(a),33(a,b)	8,10,16,26,34(b)

- The students are strongly urged to solve much more problems than the homework and recitation problems listed above. They are also advised to attempt the recitation problems before attending the recitation sessions.

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For 8th edition

Course #: Math 102

Title: Calculus II

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

Course Description: Definite and indefinite integrals. Fundamental Theorem of Calculus. Techniques of integration. Hyperbolic functions. Applications of integration. Improper integrals. Sequences and series: convergence tests. Alternating series. Absolute and conditional convergence. Power series. Taylor and Maclaurin series.

Week	Date	Sec. #	Topics
1	Feb 12-16*	6.1 6.2	An Overview of the Area Problem The Indefinite Integral
2	Feb 18-22	6.3 6.4	Integration by Substitution Area as a Limit: Sigma Notation
3	Feb 25-Mar 1	6.5 6.6	The Definite Integral The Fundamental Theorem of Calculus
4	Mar 4-8	**7.6** 6.8 6.9	Average Value of a function(pp. 476-478 only) Evaluating Definite Integrals by Substitution Logarithmic Functions from the Integral Point of View
5	Mar 11-15	7.1 7.2	Area Between Two Curves Volumes by Slicing: Disks and Washers
Suggested Date for Major Exam I: Wednesday, March 22, 2006.			
6	Mar 18-22	7.3 7.4	Volumes by Cylindrical Shells Length of a Plane Curve
7	Mar 25-29	7.5 7.9	Area of a Surface of Revolution Hyperbolic Functions and Hanging Cables(pp. 496-500 only)
Midterm Break: April 1-2, 2006			
8	Apr 3-5	8.2 8.3	Integration by Parts Trigonometric Integrals
9	Apr 8-12	8.4 8.5	Trigonometric Substitutions Integrating Rational Functions by Partial Fractions
10	Apr 15-19	8.6 8.8	Special Substitutions (pp. 548-550 only) Improper Integrals
Suggested Date for Major Exam II: Wednesday, April 26, 2006.			
11	Apr 22-26	10.1 10.2	Sequences Monotone Sequences
12	Apr 29-May 3	10.3 10.4	Infinite Series Convergence Tests
13	May 6-10	10.5 10.6	The Comparison, Ratio and Root Tests Alternating Series; Conditional Convergence
14	May 13-17	10.7 10.8	Maclaurin and Taylor Polynomial (till p. 682) Maclaurin and Taylor Series; Power Series
15	May 20-24	10.9 10.10	The Binomial Series & Table 10.9.1 (pp. 700-701 only) Differentiating and Integrating Power Series
16	May 27-28		Review

* Normal Saturday classes on February 16.

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Math 102, Semester 052

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Suggested Homework and Recitation Problems

Sec. #	Suggested Homework Problems	Suggested Recitation Problems
6.1	2,,15,20	6,18,26
6.2	10(a,b),15,20,25,31,34,36,44,48,62	9(c),27,29,35,42(b,c),46,49,63(b)
6.3	4,14,20,27,28,32,44,49,54,56(a,b)	6,17,25,42,50,69
6.4	2(a,b,e),7,10(b,c),12,18,24,32,44,58	10(a,d),15,20,26,46,53,59(a)
6.5	2,6,10(b),16(c),22,26,28(b),32	4,8,14,21,24,30,38
6.6	4,13,22,24,31,39,56,60,66(a)	8,23,26,32,41,61,67
7.6	5,8	7
6.8	4,9,17,20,28,34,41,51,64(a)	12,15,21,26,46,63
6.9	2,4(b,c),10,12,18,25,32,42	3(a,b),16,22(b),39
7.1	3,8,13,18,31,46	6,14,32,44
7.2	4,12,14,23,30,35,41	9,25,29,36,43
7.3	2,6,16,24,30	4,8,26
7.4	8,10,14	4,12
7.5	2,7,20,29,32	8,31,33
7.9	4,5(a),12,17,32,37,50	3,16,33,38,68
8.2	2,7,14,18,23,28,38,41(a),46,56(a)	12,21,24,27,36,41(b),60(a)
8.3	8,11,14,19,30,42,51,61	15,32,44,50,64
8.4	2,10,14,24,39,42	8,20,40,43
8.5	3,11,21,32,34	12,30,33,41
8.6	56,61,66,69	62,64,68
8.8	1,6,9,16,18,26,31,43,52,63	4,15,24,33,62
10.1	2,6,10,11,20,21,26,30,39,42	8,12,16,22,38,41
10.2	5,10,15,23	11,17,22,28
10.3	2,5,8,13,17,25(a),26(c),27(a),31	9,14,20,25(b),27(b),28,30
10.4	2,4,5(a,d),7(b),12,22,25,29(a,b)	3(b),5(d),9,14,19,21,30(a)
10.5	3(a),4(a),9,12,17,29,32,38,43	3(b),6,16,20,28,40,42
10.6	5,9,14,22,26,33,48	6,12,17,30
10.7	3,10,14,22,24,25,36	11,12,18,21,26,33
10.8	2,5,16,17,22,23,29,30,35,44,47,57	10,18,20,28,38,48
10.9	17(b,c)	17(a)
10.10	2(c,d),6(d),7(a),9(b),11,15,25,28(a),34(a,b)	8,10,16,26,35(b)

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