King Fahd University of Petroleum and Minerals
Department of Mathematics & Statistics
Math 102 – Syllabus   Revised
2011-2012 (Term 112)
Coordinator: Dr. A. Shawky Ibrahim

Title: Calculus II
Credit: 4-0-4
Textbook: Calculus (Early Transcendentals), by J. Stewart, 6th edition, Brooks/Cole, 2008
Description: Definite and indefinite integrals of functions of a single variable. Fundamental Theorem of Calculus. Techniques of integration. Application of the definite integral to area, volume, arc length and surface of revolution. Improper integrals. Sequences and series: convergence tests, integral, comparison, ratio and root tests. Alternating series. Absolute and conditional convergence. Power series. Taylor and Maclaurin series.

Grading Policy

1. Exam I: 25% (100 points), Date: Tuesday, February 28, 2012 (8:30-10:30 p.m). A common Multiple Choice Exam. Material: 5.1-6.2.
2. Exam II: 25% (100 points) Date: Thursday April19, 2012 (9:00-11:00p.m) Common Written Exam. Material (6.3-11.1)
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 a multiple choice type.
4. Final Exam: 35% (140 points), A Comprehensive Common Multiple Choice Exam. It will be on **Monday, May 21, 2012 at 7:00 p.m.**

 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 an Exam. 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 Department policy. Further, the student must provide an official excuse within one week of the missed 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.

Math 102 Syllabus
2011-2012 (112)

Week	Date	Sec.	Topics (27 sections)
1	Jan. 28- Feb. 01 , 2012	5.1 5.2*	Areas and Distances The Definite Integral
2	Feb. 04-08	5.3 5.4	The Fundamental Theorem of Calculus Indefinite Integrals and the Net Change Theorem
3	Feb 11.-Feb 15	5.5 6.1	The Substitution Rule Areas between Curves
4	Feb 18.-Feb 22	6.2	Volumes
5	Feb 25.-Feb 29	6.3 6.5	Volumes by Cylindrical Shells Average Value of a Function
Exam I: Tuesday, February 28, 2012, 8:30 p.m Material: [5.1 – 6.2]		
6	Mar. 03-Mar. 07	7.1 7.2	Integration by Parts Trigonometric Integrals
7	Mar. 10-Mar. 14	7.3 7.4	Trigonometric Substitution Integration of Rational Functions by Partial Fractions + **Exercise #57**
8	Mar. 17-Mar. 21	7.5 7.8	Strategy for Integration Improper Integrals (up to page 514 only, End of example 8)
Midterm Vacation: March 24-28, 2012		
9	Mar. 31-Apr. 04	11.1	Sequences (up to page 682 only, End of example 12)
10	Apr 07-11	11.2 11.3	Series The Integral Test and Estimates of Sums
Exam II: Thursday April 19,2012, 9:00 p.m Material [6.3-11.1]		
11	Apr 14-18	11.4 11.5	The Comparison Tests Alternating Series
12	Apr 21-25	11.6 11.7	Absolute Convergence and the Ratio and Root Tests Strategy for Testing Series
13	Apr 28-May 02	11.8 11.9	Power Series Representations of Functions as Power Series
14	May 05- 09	11.10**	Taylor and Maclaurin Series (Remainder Theorem is not Included.)
15	May 12- 16	8.1 8.2	Arc Length Area of a Surface of Revolution
Final Exam: Monday, May 21, 2012 at 7:00 p.m. (A Comprehensive Multiple Choice Exam)		

*: Students must know Formulas 5, 6, 7, and 8 in page 369.
**: Students must know the Maclaurin Series listed in the Table of page 743.

Math 102 (112)
Homework and Recitation Problems

Section	Homework Problems	Recitation Problems	CAS*
5.1	2, 12, 18, 20	3, 19, 21	9
5.2	4, 6, 18, 22, 30, 33(b), 37, 44, 47, 54, 57, 61	1, 17, 23, 40, 42, 48, 53	13, 31
5.3	2(a,b), 8, 18, 29, 41, 44, 54, 59, 66, 68, 71	13, 42, 46, 56, 70	-
5.4	14, 18, 38, 44, 58	3, 13, 31, 40, 60	45
5.5	17, 24, 35, 38, 59, 62, 82, 86, 87	26, 41, 67, 83	72
6.1	13, 16, 20, 23, 31, 53	4, 10, 50(b)	36
6.2	4, 16, 17, 36, 44, 51, 56	12, 35, 41, 58	39
6.3	4, 12, 19, 23, 38, 43	11, 16, 26, 37	36
6.5	6, 9, 14	4, 13	12
7.1	8, 12, 18, 26, 35, 38, 50, 58	11, 22, 29, 57	40
7.2	2, 14, 27, 44, 50, 58, 64	15, 26, 33, 43	51
7.3	7, 16, 21, 24, 28, 43	11, 27, 30, 34	36
7.4	6, 16, 20, 28, 36, 45, 60	15, 24, 30, 47, 59	54
7.5	6, 22, 23, 32, 52, 65, 75	39, 69, 78	-
7.8	8, 22, 27, 33, 40	1, 2, 6, 30, 34	-
11.1	12, 24, 36, 45, 58, 64	29, 38, 62	48
11.2	9, 14 19, 24, 33, 38, 44, 51, 55	16, 29, 40, 50, 60	6
11.3	6, 10, 20, 28, 36	7, 12, 19, 30	-
11.4	4, 12, 24, 32, 35	6, 13, 27, 45	-
11.5	6, 10, 14, 24, 28, 34	5, 16, 27, 32	21
11.6	6, 11, 18, 21, 26, 30	5, 14, 16, 23, 28, 33	-
11.7	5, 8, 15, 17, 18, 22, 32, 38	12, 23, 24, 31	-
11.8	6, 17, 24, 28, 30	8, 20, 27, 29	-
11.9	4, 9, 14, 18, 25, 38(a,b)	8, 16, 30, 38(c)	-
11.10	12, 19, 33, 49, 54, 60, 65	20, 32, 56, 59, 68	39
8.1	8, 14, 18, 31, 41	10, 12, 33	21
8.2	10, 11, 14, 15, 26	25, 29	24

* CAS problems require the use of a technology tool (e.g., graphing calculators or a computer). You are encouraged to do these problems in order to enhance your understanding of the concepts involved.

Tips on how to enhance your problem-solving abilities:
1. Please do all the homework assignments on time.
2. You are urged to practice (but not memorize) more problems than the above lists.
3. You should always try to solve a problem on your own before reading the solution or asking for help.
4. If you find it difficult to handle a certain type of problems, you should try more problems of that type.
5. You should try the recitation problems before coming to class.
6. You are encouraged to solve some of the review problems at the end of each chapter.
7. The practice you get doing homework and reviewing the class lectures and recitations will make exam problems easier to tackle.
8. Try to make good use of the office hours of your instructor.