King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math 102 Syllabus
Summer 2013 (123)
Coordinators: Dr. B. Chanane , Dr. A. Guesmia and Dr. M. Kafini

Title: Calculus II (4-0-4)

Textbook: Thomas Calculus (Early Transcendentals) by G. Thomas, M. Weir, and J. Hass, 12th edition, Pearson, 2010.

Description: Definite and indefinite integrals of functions of a single variable. Fundamental Theorem of Calculus. Techniques of integration. Hyperbolic functions. Applications 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:

Exam I (MCQ)	Material: 5.3-6.4 Date: Tuesday, June 25, 2013	Place: Building 54 Time: 4.30pm to 6.30pm	25% (100 points)
Exam II (Written)	Material: 7.1-8.7 Date: Sunday, July 14, 2013	Place: Building 54 Time:	25% (100 points)
Final Exam (MCQ)	Material: Comprehensive Date: Monday, July 29, 2013	Place: Time: 9:00 PM-12:00	35% (140 points)
Class Work	**Online Homework:** www.kfupm.mylabsplus.com		5% (20 points)
	Class Activities: quizzes , class tests,… should be of a written type and not of a multiple choice type.		10% (40 points)
	The average X (out of 40) of the class activities of the sections taught by the same instructor should be in the interval [24, 30].		

Exam Questions: The questions of the common exams are based on the examples, homework and recitation problems, and the exercises of the textbook.

Missing Exam I or Exam II: No makeup exam will be given under any circumstance. When a student misses Exam I or Exam II for a legitimate reason (such as a medical emergency), his grade for this exam will be determined based on the existing formula which depends on his performance in the non-missed exam and in the final exam.

Attendance: Attendance is a University Requirement (see p. 38 of the Undergraduate Bulletin 2006-2009). A DN grade will be awarded to any student who accumulates 10 unexcused absences (lecture & recitation)

Academic Integrity: KFUPM policy regarding ethics apply to this course.

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Week	Date	Sec. Num.	Topics
1	June 8-13*	5.3	The Definite Integral
		5.4	The Fundamental Theorem of Calculus
		5.5	Indefinite Integrals and the Substitution Method
		5.6	Substitution and Area between curves
2	June 15-20*	5.6	Substitution and Area between curves (Cont')
		6.1	Volumes using Cross-Sections
		6.2	Volumes using Cylindrical Shells
		6.3	Arc Length
3	June 22-26	6.4	Areas of surface of Revolution
		7.1	The Logarithm defined as an integral
		7.3	Hyperbolic functions
		8.1	Integration by parts
Exam I: Material 5.3-6.4 Tuesday, June 25, 2013			
4	June 29 – July 3	8.2	Trigonometric Integrals
		8.3	Trigonometric Substitutions
		8.4	Integration of Rational Functions by Partial Fractions
5	July 6-10	8.7	Improper Integrals
		10.1	Sequences
		10.2	Infinite Series
6	July 13-17	10.3	The Integral Test
		10.4	Comparison Tests
		10.5	The Ratio and Root Tests
Exam II: Material 7.1-8.7 Tuesday, July 14, 2013			
7	July 20-24	10.6	Alternating Series, Absolute and Conditional Convergence
		10.7	Power Series
		10.8	Taylor and MacLaurin Series
		10.9	Convergence of Taylor Series
8	July 27	10.10	The Binomial Series and Applications of Taylor Series
Final Exam: Monday, July 29, 2013 from 9:00 PM to 12:00 (Comprehensive MCQ Exam)			

Section	Homework Problems	Recitation Problems	CAS*
5.3	6, 16, 22, 29, 40, 52,60, 73, 78	2,9,20	92, 101
5.4	6,9,16,24,27,32,40,48,57,67,73,77	7,14,37	88
5.5	4,14,26,39,52,53,66,70,76	3,21,35	
5.6	4,9,15,20,26,39,47,63,68,74,84,85,105	2,29,35	120
6.1	2,6,15,17,20,27,29,42,46,52,55	11,12,18	62(c)
6.2	8,19,24,28a,28b,33,39,48	2,4,7	
6.3	1,4,9,11,20,23	2,14,21	36
6.4	4a,10,14,17,24,25	1,6,20	4(b,c)
7.1	2,4,8,18,30,40,48,52,53	3,11,31	58(c), 66
7.3	9, 11,14,23,26,30,34,40,42,54,67,79	4,5,17	
8.1	4,11,24,29,33,36,50,53,59,73	1,8,26	
8.2	3,7,14,23,28,36,38,44,48,56,58,63,68,70	4,17,45	
8.3	1,8,13,16,23,32,46,52,54	3,13,36	
8.4	6, 13, 16, 17, 20, 29, 34, 43, 48, 55	4,14,22	59
8.7	2, 5, 10, 19, 22, 29, 32, 33, 37, 40, 42, 45, 56, 71	12,34,61,62	76 (a)
10.1	4, 10, 25, 28, 38, 42, 52, 71, 84, 88, 91, 97	16,39,60,80,83,113	142
10.2 Part I	6, 10, 30, 31, 37, 38, 41, 44, 47	12,18,23,32,40,46,68	
10.2 Part II	50, 54, 59, 62, 66, 71, 74, 75, 78, 79, 91		
10.3	3, 8, 12, 16, 19, 22, 26, 40	6,27,36,39	43(b)
10.4	7, 10, 14, 23, 27, 45, 54	8,16,30,35,51	69
10.5	4, 8, 12, 22, 25, 29, 42, 62	5,14,28,60	
10.6	2, 8, 12, 16, 23, 29, 43, 46, 50	10,21,44,53	67
10.7	4, 5, 12, 22, 35, 40, 44, 49	14,34,39,46	
10.8	12, 18, 22, 25, 34	10,20,30,36	
10.9	2, 4, 10, 22, 24, 30	8,28,34	54
10.10	10, 12, 20, 26, 32, 36, 44, 52, 68	2,14,30,48	15, 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.