

King Fahd University of Petroleum and Minerals
Department of Mathematics & Statistics
Math 102 – Syllabus
Summer Term : 2009-2010 (093)
Coordinator: Dr. A. Shawky Ibrahim

Title: Math 102: 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), a **common Multiple Choice Exam (MCQ)**. It will be held on **Monday, July 19, 2010**.
2. Exam II: 25% (100 points), a **common Written Exam**. It will be held on **Monday, August 9, 2010**.
3. Class Work: 15% (60 points). It is based on quizzes (about 5 quizzes), homework, or other class activities determined by the instructor. Any quiz or test under class activity should be of a written type and not of a multiple choice type.
4. Final Exam: 35% (140 points), a **Comprehensive Common Multiple Choice Exam**. **It will be held on Tuesday August 24, 2010 at 12:30 pm**

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 his average performance and the overall average. 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 10 unexcused absences (lecture and recitation).

Academic Integrity: All KFUPM policies regarding ethics apply to this course.

King Fahd University of Petroleum and Minerals
Department of Mathematics & Statistics
Summer Term 2009-2010 (093)

Math 102 – Syllabus

Coordinator: Dr. A. Shawky Ibrahim

Title : Calculus II

Textbook : Calculus (Early Transcendentals): by J. Stewart; 5th edition, 2003

Objectives: 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 Maclarin series.

Week	Date	Sec.	Topics
1	July 3-July 7	5.1 5.2* 5.3 5.4	Areas and Distances The Definite Integral The Fundamental Theorem of Calculus Indefinite Integrals and the Net Change Theorem
2	July 10-July 14	5.5 6.1 6.2	The Substitution Rule .Areas between Curves Volumes
3	July 17-July 21	6.3	Volumes by Cylindrical Shells
		Exam I (25%): Mon., July 19, 2010. Material [5.1, 6.2]	
		6.5 7.1	Average Value of a Function Integration by Parts
4	July 24-July 28	7.2 7.3 7.4 7.5	Trigonometric Integrals Trigonometric substitution Integration of Rational Functions by Partial Fractions + Exc. # 57 Strategy for Integration
5	July 31-Aug 4	7.8 11.1 11.2 11.3	Improper Integrals (Up to End of Example 8 page 514) Sequences (Up to End of Example 10 page 681) Series The Integral Test and Estimates of Sums
6	Aug 7-Aug 11	11.4 11.5 11.6	The Comparison Tests Alternating Series Absolute Convergence and the Ratio and Root Tests
		Exam II (25%): Mon, Aug. 9, 2010. Material [6.3, 11.3] (As covered)	
		11.7	Strategy for Testing Series
7	Aug 14-Aug 18	11.8 11.9 11.10**	Power Series Representation of Functions as Power as Power Series Taylor and Maclarin Series (Remainder Theorem is not included)
8	Aug 21-Aug 23	8.1 8.2	Arc Length Area of a Surface of Revolution
Final Exam (35%): Tuesday Aug 24,2010 at 12:30 pm (Comprehensive).			

*Students must know formulas: 5 to 11 page 369. ** Students must know the Maclarin Series listed in the Table page 743.

Math 102 (093)

Revised 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, 42, 81, 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, 57*, 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	-
8.1	8, 14, 18, 31, 41	10, 12, 33	21
8.2	10, 11, 14, 15, 26	25, 29	24
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, 33, 28	-
11.7	5, 8, 15, 17, 18, 22, 32, 38	12, 23, 31, 24	-
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

* 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.

Try to make good use of the office hours of your instructor