King Fahd University of Petroleum and Minerals
Department of Mathematics & Statistics

Math 132 – Syllabus

2013-2014 (131)

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Office Hours: UMR : 11 am to 11 :50 am.
Title: Math 132: Applied Calculus
Credit: 3-0-3

Textbook: *Introductory Mathematical Analysis (for Business, Economics, and the Life and Social Sciences), by Ernest F. Haeussler, Jr. Richard S. Paul and Richard J. Wood, 13th edition, Pearson, 20011.*

Objectives: To provide a mathematical foundation for students in business, economics, and the life and social sciences. Topics include: Limits and continuity of functions of a single variable. The derivative. Rules for differentiation. Derivative of Logarithmic, exponential, and trigonometric functions. Differentials. Growth and decay models. Definite and indefinite integrals. Techniques of integration. Integrals involving logarithmic, exponential and trigonometric functions. Area under a curve and between curves. Functions of several variables. Partial derivatives and their applications to optimization.

Grading Policy

1. **Exam I: 25%** (100 points) --- (**A written exam**) **Date TBA.**
2. **Exam II: 25%** (100 points) --- (A **multiple choice exam**) **Date TBA.**
3. **Class Work: 20%** (80 points). It is based on 4 quizzes (16 point +Hwk 4 points). No makeup quiz will be given under any circumstance. When a student misses a quiz, his grade for this quiz will be zero unless an official excuse from student affairs is presented on time. The questions of the quizzes are exercises from the textbook.
4. **Final Exam: 30%** (120 points), a **comprehensive multiple choice exam.** (**Date: Monday December 30, 2013 at 12:30 PM)**.

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

Missing One of the Two Common Major Exams I or 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 medical emergencies), his grade for this exam will be determined based on the existing formula which depends on his performance in the other major and in the final exam.

Attendance: DN grade will be awarded to any student who accumulates 9 unexcused absences. NO MARKS ARE ASSIGNED FOR ATTENDANCE

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

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Week	Date	Section	Material	Homework
1	September 01-05	10.1 10.2 10.3	Limits Limits (cont'd) Continuity	18, 22, 32, 40, 43 2, 15, 30, 39, 45, 50, 52, 58 6, 11, 22, 30, 36
2	September 08-12	11.1 11.2 11.3	The derivative Rules for differentiation The derivative as a rate of change	12, 15, 18, 20, 25, 27 22, 33, 60, 72, 78, 85 8, 10, 12, 16, 21, 27, 40, 41
3	September 15-19	11.4 11.5	Product &quotient rule The chain rule & the power rule	9,15 , 28,37,57,66 -----
4	September 22-26	12.1 12.2	Derivative of logarithmic functions Derivative of exponential functions	,30 ,28 ,24 ,20 ,18 ,16 50,32 10, 14, 16, 22, 28, 30, 38,39
	Monday, September 23, 2013, is the National Day Holiday			
5	Sep 29-Oct 03	12.4 12.5 12.7	Implicit differentiation Logarithmic differentiation Higher order derivative	10, 14, 20, 22, 30, 34 7, 10, 14, 18, 20, 27 2, 8, 14, 30, 33, 35
Exam I, Tuesday October 8, from 6:00 pm to 6:30 pm, Material: Ch. 10, 11 & 12 (25%)				
6	October 06-09	13.1 13.2 13.3	Relative extrema Absolute extrema on a closed interval Concavity	16, 18, 30, 38, 48, 52 2, 10, 12 12, 28, 40, 42, 60, 68
Eid Al-Adha Break: Thursday, Oct. 10, 2013 to Sunday, Oct. 20, 2013				
7	October 21-24	13.4 13.5 13.6	The second derivative test Asymptotes Applied maxima and minima	5, 6, 8, 10, 12 14, 20, 22, 34, 35, 45 4, 15, 18, 22, 26
8	October 27-31	14.1 14.2	Differentials The indefinite integral	12, 14, 20, 22, 29 8, 10, 18, 27, 30, 45
9	November 03-07	14.3 14.4 14.5	Integration with initial conditions More integration formulas Techniques of integration	5, 7, 11, 14,15 9, 12, 15, 33, 35, 52 6, 12, 23, 30, 40, 44, 53,63
10	November 10-14	14.7 14.9	Fundamental theorem of calculus Area between curves	16,36 ,42 ,44,48 1, 3, 5, 20, 33, 37,46,58
Exam II, Tuesday November 19, from 6:00 pm to 6:30 pm, Material: Ch. 13 & 14 (25%)				
11	November 17-21	15.1 15.3	Integration by parts Integration by tables	6, 8, 12, 18, 20, 24, 32
12	November 24-28	Handout	Derivative and integrals of trigonometric Functions	
13	December 01-05	17.1	Partial derivatives	2,8, 18, 20, 24, 30, 35
14	December 08-12	17.4	Higher order partial derivatives	6, 8, 12, 18, 20,21, 23
15	December 15-19	17.6	Maxima and minima	4, 9, 17, 19, 22, 26, 29
16*	December 22-24		Review and Catchup	
	Tuesday, Dec. 24, is a Normal Thursday (Last day of classes)			

*	**Wednesday and Thursday, Dec. 25-26: Final Exams Preparation Break**
Final Exam: Monday December 30, 2013 at 12:30 PM. Material: Comprehensive (30%)	

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.