

**King Fahd University of Petroleum and Minerals**  
**Department of Mathematics & Statistics**  
**Math 132 – Syllabus**  
**2014-2015 (142)**  
**Instructor: Mohammad Z. Abu-Sbeih**

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**Instructor:** Dr. Mohammad Z. Abu-Sbeih  
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**Office Hours:** UTR : 10 am to 10 :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, 13<sup>th</sup> 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) - **Tuesday, February 24, 2015**
2. **Exam II: 25%** (100 points) - **Tuesday April 14, 2015**
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: **Sunday May 17, 2015 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 6 unexcused absences. **NO MARKS ARE ASSIGNED FOR ATTENDANCE**

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

## Math 132 Syllabus 2014-2015 (142)

Week	Date	Section	Material	Homework
1	January 25-29	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	February 01-05	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	February 08-12	11.4 11.5	Product &quot;quot; rule The chain rule & the power rule	9,15 , 28,37,57,66 -----
4	February 15-19	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
5	February 22-26	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
<b>Exam I, Tuesday, February 24, 2015, Material: Ch. 10, 11 &amp; 12 (25%)</b>				
6	March 01-05	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
7	March 08-12	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	March 15-19	14.1 14.2	Differentials The indefinite integral	12, 14, 20, 22, 29 8, 10, 18, 27, 30, 45
9	Mar 29-Apr 02	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	Apr 05-09	14.7 14.9	Fundamental theorem of calculus Area between curves	16,36 ,42 ,44,48 1, 3, 5, 20, 33, 37,46,58
<b>Exam II, Tuesday April 14, 2015, Material: Ch. 13 &amp; 14 (25%)</b>				
11	Apr 12-16	15.1 15.3	Integration by parts Integration by tables	6, 8, 12, 18, 20, 24, 32
12	Apr 19-23	Handout	Derivative and integrals of trigonometric Functions	
13	Apr 26-30	17.1	Partial derivatives	2,8, 18, 20, 24, 30, 35
14	May 03-07	17.4	Higher order partial derivatives	6, 8, 12, 18, 20,21, 23
15	May 10-14	17.6	Maxima and minima	4, 9, 17, 19, 22, 26, 29
<b>Final Exam: 30% (120 points), a comprehensive multiple choice exam. (Date: Sunday May 17, 2015 at 12:30 PM).</b>				

**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.