

**KING FAHD UNIVERSITY OF PETROLEUM & MINERALS
DEPARTMENT OF MATHEMATICS & STATISTICS**

(Term 152)

Math 131: FINITE MATHEMATICS

Instructor: Musawar Amin Malik

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Office Hours: UTR 8:55 am – 9:55 am, M 12:00 – 2:00 pm and by Appointment

Check Blackboard regularly for announcements

Textbook: E. Haeussler, R. Paul, & R. Wood, *Introductory Mathematical Analysis for Business, Economics, and the life and Social Sciences* (13 Ed.), Pearson, 2014.

Course Descriptions:

Linear equations and inequalities. Systems of linear equations. Basic material on matrices. Elementary Introduction to linear programming. Counting techniques. Permutations and combinations. Probability for finite Sample space. Basic concepts in statistics. Topics in mathematics of finance.

Assessment for this course is based on **class activities (attendance & homework)**, *three major exams* and a *comprehensive final exam*, as described in the following table:

Assessment

Activity	Weight
<i>Class Work</i>	5%
<i>First Major Exam. (Sections: 1.1, 1.3, 3.1-3.6)</i> <i>Monday February 15, 2016</i>	<i>Written</i> 20%
<i>Second Major Exam (Sections: 6.4-6.5, 7.1-7.4, 7.8, 5.1-5.4)</i> <i>Wednesday March 30, 2016</i>	<i>Written</i> 20%
<i>Third Major Exam (Sections: 8.1-8.6, 9.1-9.2)</i> <i>Monday, April 25, 2016</i>	<i>Written</i> 20%
<i>Final Exam (Comprehensive)</i> <i>Monday, May 22, 2016. 7:00 PM</i>	<i>MCQ</i> 35%

Grade Assignment

Score	87 – 100	80 – 86	75 – 79	70 – 74	65 – 69	60 – 64	55 – 59	50 – 54
Grade	A+	A	B+	B	C+	C	D+	D

For *Important Dates* and *Academic Calendar*, check the Registrar's site: <http://regweb.kfupm.edu.sa>

SCEDULE and COVERAGE of MATERIAL

Week # (Dates)	Sections	Topics	Homework Problems
Week 1 (Jan 17 – 21)	1.1 1.3	Applications of Equations Applications of Inequalities	4,12,16,20, 28, 33, 36, 43. 2, 4, 6, 7, 9, 10, 12.
Week 2 (Jan 24– 28)	3.1 3.2 3.3	Lines (Review) Applications and Linear Functions Quadratic Functions	12, 32, 58, 64, 69, 71. 16, 17, 18, 20, 24, 26, 31. 27, 29, 31, 34, 36, 39, 40.
Week 3 (Jan31 – Feb4)	3.4 3.5 3.6	Systems of Linear Equations Nonlinear Systems Applications of Systems of Equations	26, 28, 29, 34, 37, 39, 41. 6, 9, 12, 14, 15, 16. 8, 15, 17, 18, 19, 20, 25.
Week 4 (Feb 7 – 11)	6.4 6.5	Solving Systems by Reductions Solving Systems by Reductions (continued)	17, 23, 27, 29, 30, 31, 32. 6, 8, 10, 12, 19, 21, 24.
Week 5 (Feb 14 – 18)	7.1 7.2	Linear Inequalities in Two Variables Linear Programming	16, 18, 20, 22, 24, 28, 29. 10, 13, 14, 15, 16, 17, 18.
Week 6 (Feb 21 – 25)	7.3 7.4	Multiple Optimum Solutions The Simplex Method	1, 2, 3, 4. 5, 8, 12, 16, 17, 18, 19.
Week 7 (Feb28–Mar3)	7.8	The Dual (Exclude Example 3)	4, 10, 12, 13, 14, 15, 17.
Week 8 (Mar 6 – 10)	5.1 5.2	Compound Interest Present Value	8, 10, 12, 18, 19, 23, 24, 26. 4, 8, 10, 11, 14, 16, 21.
(March 13 – 17) Midterm Vacation			
Week 9 (Mar 20 – 24)	5.3 5.4	Interest Compounded Continuously Annuities	5, 10, 12, 14, 16, 19, 20. 16, 18, 22, 24, 26, 28, 29.
Week 10 (Mar 27 – 31)	8.1 8.2	Basic Counting Principle and Permutations Combinations and Other Counting Principles	6, 8, 10, 22, 25, 26, 29, 32, 35, 36, 38, 40. 10, 14, 18, 23, 25, 26, 30, 33, 38.
Week 11 (Apr 3 – 7)	8.3 8.4	Sample Spaces and Events Probability	3, 6, 3, 6, 9, 14, 22, 26, 28, 29. 4, 10, 16, 19, 21, 23, 24, 27, 31.
Week 12 (Apr 10 – 14) ⁱ	8.5 8.6	Conditional Probability Independent Events	2, 10, 14, 17, 23, 26, 37, 41, 47. 1, 6, 20, 23, 25, 27, 31, 32, 35, 36.
Week 13 (Apr 17 – 21)	9.1 9.2	Discrete Random Variables and Expected Value The Binomial Distribution	2, 5, 9, 11, 15, 16, 18, 21. 4, 5, 10, 11, 17, 23, 25, 26.
Week 14 (Apr 24 – 28)	16.2	The Normal Distribution	2, 5, 8, 10, 14, 17, 19, 20.
Week 15 (May 1 – 5)	Suppl. Material	Frequency Distributions Measures of Central Tendency Measures of Variation	
Final Exam (Comprehensive): as posted on the Registrar Website			

Important Notes on Grades & Academic Integrity:

Missing Exam I, II or III:

- No makeup exam will be given under any circumstance. When a student misses Exam I, Exam II or Exam III 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 non-missed exam and in the final exam.

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

Attendance:

- ✓ **Attendance** on time is *very* important. Mostly, attendance will be checked within the *first five minutes* of the class. Entering the class after that, is considered as one late, and *every two times late* equals to one absence.
- ✓ In accordance with the University rules, "a grade of **DN** in a course is given if the student's unexcused absences are more than 20% of the lecture and laboratories sessions scheduled for the course". Therefore, students who accumulate **9** or more unexcused absences will receive a **DN** grade.

Tips on how to enhance your problem-solving abilities:

1. You are urged to practice (but not memorize) more problems than the given HW lists.
2. You should always try to solve a problem on your own before reading the solution or asking for help.
3. If you find it difficult to handle a certain type of problem, you should try more problems of that type.
4. The practice you get doing homework and reviewing the class lectures will make exam problems easier to tackle.
5. Try to make good use of the office hours of the instructor.