

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

(Term 162)

Math 131: FINITE MATHEMATICS

Instructor: Musawar Amin Malik

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Office Hours: UTR 9:00 am – 11:00 am, M 12:00 – 1:00 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>	11%
<i>First Major Exam.(Sections: 1.1, 1.3, 3.1-3.6)</i> <i>Tuesday February 28, 2017</i>	16%
<i>Second Major Exam (Sections: 6.4-6.5, 7.1-7.4, 7.8)</i> <i>Tuesday March 28, 2017</i>	18%
<i>Third Major Exam(Sections: 5.1 - 5.4, 8.1-8.6)</i> <i>Tuesday May 9, 2017</i>	20%
<i>Final Exam (Comprehensive)</i> As posted on the Registrar Website	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 (Feb 5 – 9)	1.1 1.3	Applications of Equations Applications of Inequalities	9, 12, 16, 21, 25, 31, 33, 43 2, 4, 6, 7, 9, 10, 12
Week 2 (Feb 12– 16)	3.1 3.2 3.3	Lines (Review) Applications and Linear Functions Quadratic Functions	8, 13, 32, 58, 65, 71, 72 15, 17, 19, 20, 24, 26 13, 15, 17, 29, 30, 31, 32, 33
Week 3 (Feb 19 – 23)	3.4 3.5 3.6	Systems of Linear Equations Nonlinear Systems Applications of Systems of Equations	6, 15, 19, 35, 36, 40, 41 1, 3, 6, 12, 13 3, 7, 9, 13, 15, 17, 18, 20
Week 4 (Feb26–Mar2)	6.4 6.5	Solving Systems by Reductions Solving Systems by Reductions (continued)	17, 20, 23, 27, 29, 30, 32 1, 6, 10, 13, 19, 21, 24
Week 5 (Mar 5 – 9)	7.1 7.2	Linear Inequalities in Two Variables Linear Programming	18, 20, 22, 24, 28, 29 5, 10, 13, 17, 18
Week 6 (Mar 12 – 16)	7.3 7.4	Multiple Optimum Solutions The Simplex Method	1, 2, 3, 4 5, 8, 12, 16, 19
Week 7 (Mar 19 – 23)	7.8	The Dual (Exclude Example 3)	2, 4, 5, 10, 14, 15
Week 8 (Mar 26 – 30)	5.1 5.2	Compound Interest Present Value	8, 10, 12, 18, 19, 20, 23, 24 4, 8, 10, 11, 14, 16, 19, 21
(April 2 – 6) Midterm Break			
Week 9 (Apr 9 – 13)	5.3 5.4	Interest Compounded Continuously Annuities	5, 10, 12, 14, 16, 19, 21, 22 6, 10, 11, 16, 19, 22, 28, 29, 30
Week 10 (Apr 16 – 20)	8.1 8.2	Basic Counting Principle and Permutations Combinations and Other Counting Principles	6, 8, 10, 19, 22, 25, 29, 32, 37, 40 6, 10, 14, 17, 23, 25, 26, 30, 34, 38
Week 11 (Apr 23 – 27)	8.3 8.4	Sample Spaces and Events Probability	4, 11, 18, 20, 22, 26, 27, 28, 29 6, 10, 16, 19, 21, 23, 24, 28, 36, 42
Week 12 (Apr30–May4)	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 (May 7 – 11)	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 (May 14 – 18)	16.2	The Normal Distribution	2, 5, 8, 10, 14, 17, 19, 20.
Week 15 (May 21 – 25)	Suppl. Material	Frequency Distributions Measures of Central Tendency Measures of Variation	
Final Exam (Comprehensive): As posted on the Registrar Website			

King Fahd University of Petroleum & Minerals
 Department of Mathematical Sciences
 Math 131 Syllabus (162)
 (Instructor: Dr. Rajai Alassar, 5-311)
<http://faculty.kfupm.edu.sa/math/alassar/>)

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.

Textbook: Introductory Mathematical Analysis for Business, Economics, and the life and Social Sciences, by Ernest F. Haeussler, Jr. Richard S. Paul, & R. J. Wood, 13th Ed. (2014).

Week	Date	Sec.	Material	HW
1	Feb 05-09	1.1 1.3 3.1	Applications of Equations Applications of Inequalities Lines (Review)	9, 12, 16, 21, 25, 31, 33, 43 2, 4, 6, 7, 9, 10, 12 8, 13, 32, 58, 65, 71, 72
2	Feb 12-16	3.2 3.3 3.4	Applications & Linear Func Quadratic Functions (Rev.) Systems of Linear Equations	15, 17, 19, 20, 24, 26 13, 15, 17, 29, 30, 31, 32, 33 6, 15, 19, 35, 36, 40, 41
3	Feb 19-23	3.5 3.6	Nonlinear Systems Applicat.of Systems of Eqns.	1, 3, 6, 12, 13 3, 7, 9, 13, 15, 17, 18, 20
4	Feb 26- March 2	6.4 6.5	Solving Systems by Reduc Solving Systems (Continued)	17, 20, 23, 27, 29, 30, 32 1, 6, 10, 13, 19, 21, 24
5	March 05-09	7.1 7.2	Linear Inequalit. in Two Var. Linear Programming	18, 20, 22, 24, 28, 29 5, 10, 13, 17, 18
6	March 12-16	7.3 7.4	Multiple Optimum Solutions The Simplex Method	1, 2, 3, 4 5, 8, 12, 16, 19
7	March 19- 23	7.8 5.1	The dual (Exclude Example 3) Compound Interest	2, 4, 5, 10, 14, 15 8, 10, 12, 18, 19, 20, 23, 24
8	March 26-30	5.2 5.3	Present Value Interest Compound. Contin.	4, 8, 10, 11, 14, 16, 19, 21 5, 10, 12, 14, 16, 19, 21, 22
April 2-6, Midterm Break				
9	April 9- 13	5.4 8.1	Annuities Basic Counting Principle	6, 10, 11, 16, 19, 22, 28, 29, 30 6, 8, 10, 19, 22, 25, 29, 32, 37, 40
10	April 16-20	8.2 8.3	Comb and Other Count Prin. Sample Spaces and Events	6, 10, 14, 17, 23, 25, 26, 30, 34, 38 4, 11, 18, 20, 22, 26, 27, 28, 29
11	April 23- 27	8.4 8.5	Probability Conditional Probability	6, 10, 16, 19, 21, 23, 24, 28, 36, 42 2, 10, 14, 17, 23, 26, 37, 41, 47
12	April 30- May 4	8.6 Suppl.	Independent Event Frequency Distribution	1, 6, 20, 23, 25, 27, 31, 32, 35, 36 TBA
13	May 7-11	Suppl.	Measurs of Central Tendency Measurs of Variations	TBA
14	May 14- 18	9.1 9.2	Discr. Rand Var.& Exp.Value The Binomial Distribution.	2, 5, 9, 11, 15, 16, 18, 21 4, 5, 10, 11, 17, 23, 25, 26
15	May 21- 25	16.2	The Normal Distribution	2, 5, 8, 10, 14, 17, 19, 20

Exams I, II, III 64%
 Classwork 6%
 Final Exam 30%

Important Dates and Academic Calendar: <http://regweb.kfupm.edu.sa>, KFUPM Attendance Policy will be enforced.