KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS
Department of Mathematics & Statistics

MATH 131: *Finite Mathematics*

2011–2012 (112)

General Information

Goal: To provide a mathematical foundation for students in business, economics, and the life and social sciences. Topics include: 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.

Texts: Haeussler, Paul & Wood: *"Introductory Mathematical Analysis for Business, Economics, and the Life and Social Sciences"*, 12th Edition. — Lial & Hungerford: *"Mathematics with Applications"*, 7th Edition.

	Room	*Time*	*Instructor*
Section 1	59-1008	SMW 8:00–8:50 AM	**Stefanos Orfanos** Office Hours: SUM 1:00–3:00 PM (subject to changes) Office: 5-320, Phone: 7630 `sorfanos@kfupm.edu.sa`
Section 3	59-2025	SMW 9:00–9:50 AM	

Assessment & Ground Rules

Quizzes (written) = **6%**, Homework = **6%**, Attendance = **3%**.
Exam I (written) = **25%** — Material: Up to and including § 7.3 — Feb 28, 6:00–8:00 PM at B54.
Exam II (MCQ) = **25%** — Material: From § 6.4 up to and including § 8.3 — Apr 10, Time/Room TBA.
Final Exam (MCQ) = **35%** — Material: Comprehensive — May 20, 7:00–10:00 PM, Room TBA.

Homework assigned each week will be due in class the following Saturday. Late HW won't be accepted. Dates for all quizzes are in the next page. No makeup quizzes will be given. A student must provide an official excuse within one week of his missed HW/quiz to avoid getting a 0.

No makeup exam will be given under any circumstances. When a student misses an exam for a legitimate reason (such as medical emergencies), his exam grade will be determined based on the Department policy. Further, the student must provide an official excuse within one week of the missed exam.

Attendance is a University Requirement (see p. 38 of the Undergraduate Bulletin 2006–2009.) A DN grade will be awarded to any student who accumulates **9** unexcused absences. All KFUPM policies regarding ethics apply to this course.

Week	*Dates*	*Section*	*Topic*	*Homework*
1	28/1–1/2	§ 1.1 § 1.3 § 3.1	Applications of Equations Applications of Inequalities Lines (Review)	4, 12, 16, 20, 25, 28, 33, 36, 43 1, 2, 4, 5, 6, 7, 9, 10, 12 12, 32, 58, 64, 66, 67, 69, 71
2	4/2–8/2	§ 3.2 § 3.3 § 3.4	Applications & Linear Functions Quadratic Functions Systems of Linear Equations	16, 17, 18, 20, 24, 25, 26, 31 27, 29, 30, 31, 34, 36, 39, 40 26, 28, 29, 34, 37, 38, 39, 41
3	11/2–15/2	 § 3.5 § 3.6	**Quiz 1**, *Review/Catch-up* Nonlinear Systems Applications of Systems of Equations	 4, 6, 7, 9, 12, 13, 14, 15, 16 7, 8, 15, 16, 17, 18, 19, 20, 21, 25
4	18/2–22/2	§ 7.1 § 7.2 § 7.3	Linear Inequalities in 2 variables Linear Programming Multiple Optimum Solutions	16, 18, 20, 21, 22, 24, 28, 29 4, 10, 13, 14, 15, 16, 17, 18 1, 2, 3, 4
5	25/2–29/2	 § 6.4 § 6.5	**Quiz 2**, *Review for Exam I* Reduction in Matrix Algebra Reduction in Matrix Algebra	 17, 23, 25, 27, 28, 29, 30, 31, 32 4, 6, 8, 10, 12, 19, 21, 24
			Tuesday, February 28: Exam I 6:00–8:00 PM, Building 54	
6	3/3–7/3	§ 7.4 § 7.8 § 5.1	The Simplex Method The Dual (exclude Example 3) Compound Interest	5, 8, 12, 14, 16, 17, 18, 19 4, 6, 10, 12, 13, 14, 15, 17 8, 10, 12, 18, 19, 23, 24, 26
7	10/3–14/3	§ 5.2 § 5.3 § 5.4	Present Value Interest Compounded Continuously Annuities	8, 10, 11, 14, 16, 17, 18, 19, 21, 22, 24 5, 10, 12, 14, 16, 19, 20 16, 18, 22, 24, 26, 28, 29, 30
8	17/3–21/3	 § 8.1 § 8.1	**Quiz 3**, *Review/Catch-up* Counting Principles & Permutations Counting Principles & Permutations	 4, 6, 8, 10, 19, 22, 25, 26, 28, 29, 30 32, 35, 36, 37, 38, 40
			Midterm Vacation	
9	31/3–4/4	§ 8.2 § 8.2 § 8.3	Combinations & Counting Principles Combinations & Counting Principles Sample Spaces & Events	10, 11, 14, 15, 18, 23, 25, 26 27, 28, 29, 30, 31, 33, 34, 38 3, 6, 9, 14, 22, 26, 27, 28, 29, 31
10	7/4–11/4	 § 8.4 § 8.5	**Quiz 4**, *Review for Exam II* Probability Conditional Probability	 4, 10, 16, 19, 21, 23, 24, 27, 29, 31, 32 2, 9, 11, 12, 14, 16, 17, 23, 24
			Tuesday, April 10: Exam II Time/Room TBA	
11	14/4–18/4	§ 8.5 § 8.6 § 8.6	Conditional Probability Independent Events Independent Events	26, 36, 37, 39, 40, 42, 49, 50, 51 2, 4, 7, 8, 13, 14, 20, 23, 25 27, 28, 29, 31, 32, 33, 35, 36
12	21/4–25/4	 § 9.1 § 9.2	**Quiz 5**, *Review/Catch-up* Discrete RV & Expected Value The Binomial Distribution	 3, 4, 5, 6, 9, 11, 12, 13, 15, 16, 18, 20 4, 5, 10, 12, 13, 16, 17, 19
13	28/4–2/5	§ 9.2 § 16.1 § 16.2	The Binomial Distribution Continuous RV The Normal Distribution	20, 21, 22, 23, 24, 25, 26 6, 10, 11, 12, 13, 14 2, 10, 14, 16, 17, 18, 19, 20, 21, 22
14	5/5–9/5	*11.1* *11.1* *11.2*	Frequency Distributions *(L–H)* Measures of Central Tendency *(L–H)* Measures of Variation *(L–H)*	2, 4, 9, 11, 13, 15, 20, 22 23, 25, 27, 35, 37, 39, 43, 44 5, 8, 10, 12, 13, 24, 25, 26, 33, 36
15	12/5–16/5		**Quiz 6** *Review for Final Exam*	
			Sunday, May 20: Final Exam 7:00–10:00 PM, Room TBA	