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

MATH 105: FINITE MATHEMATICS *(192)*

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.

Learning outcomes: Upon completion of this course, students should be able to

- Formulate and solve business related problems using equations and inequalities.
- Solve system of linear equations using matrices.
- Solve linear programing problems graphically and by the simplex method.
- Solve financial problems involving compound interest, present and future values, and annuities.
- Demonstrate ability to count and use descriptive statistics and basic probability concepts.
- Recognize and apply the Binomial and Normal distributions and their applications in business.

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

Assessment

Activity	Weight
Class Work: Quizzes, HW, Attendance, etc. The section average out of 60 *should* be in the interval [42, 45]	15% (60 points)
*First Major Exam: MCQ (***Sections: 1.1 to 7.8***)* *TBA*	25% (100 points)
*Second Major Exam: MCQ (***Sections: 5.1 to 8.6***)* *TBA*	25% (100 points)
Final Exam: MCQ (Comprehensive) As posted on the Registrar Website	35% (140 points)

Grade Assignment: A student must score at least 50% (200 out of 400) to pass the course and minimum score required for A+ is 90% (360 out of 400).

Missing exam 1 or exam 2: No makeup exam will be given under any circumstances, when a student misses Ex-1 or Ex-2 for a legitimate reason (such as medical emergency), his grade for

this exam will be determined based on an existing formula, which depends on his performance in the non-missed exam and the final exam.

DN grade: A DN grade will be awarded to any student who accumulates 9 unexcused absences for classes UTR (Sunday, Tuesday and Thursday) and 6 unexcused absences for classes of MW(Monday and Wednesday)

Academic integrity: All KFUPM policies regarding ethics apply to this course

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

Syllabus – A rough weekly guideline

Week # (Dates)	Sections	Topics	Homework Problems
Week 1 (Jan 19 – 23)	**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 26 – 30)	**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 (Feb 2 – 6)	**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 9 – 13)	**6.4** **6.5**	**Solving Systems by Reductions** **Solving Systems by Reductions (cont.)**	17, 23, 27, 29, 30, 31, 32. 6, 8, 10, 12, 19, 21, 24.
Week 5 (Feb 16 – 20)	**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 23 – 27)	**7.3** **7.4**	**Multiple Optimum Solutions** **The Simplex Method**	1, 2, 3, 4. 5, 8, 12, 16, 17, 19.
Week 7 (Mar 1 – 5)	**7.8**	**The Dual (Exclude Example 3)**	4, 10, 12, 13, 14, 15, 17.
Week 8 (Mar 8 – 12)	**5.1** **5.2**	**Compound Interest** **Present Value**	8, 10, 12, 18, 19, 23. 24, 26. 4, 8, 10, 11, 14, 16, 21.
Week 9 (Mar 15 – 19)	**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 22 – 26)	**8.1** **8.2**	**Basic Counting Principle and Permutations** **Combinations and Other Counting Principles**	6, 8, 10, 22, 25, 29, 32, 36, 38. 10, 14, 18, 23, 25, 26, 30, 33, 38.
Week 11 (Mar 29–Apr 2)	**8.3** **8.4**	**Sample Spaces and Events** **Probability**	3, 6, 9, 14, 22, 26, 28, 29. 4,10,16,19, 21, 23, 24, 27, 31.

Week 12 (Apr 5 – 9)	**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.
Week 13 (Apr 12 – 16)	**9.1** **9.2**	**Discrete Random Variables and Expected Value** **The Binomial Distribution**	3, 4, 5, 9, 11, 15, 16, 18, 20. 4, 5, 10, 12, 17, 19, 20, 23, 25, 26.
Week 14 (Apr 19 – 23)	**16.2**	**The Normal Distribution**	2, 10, 14, 17, 19, 20, 21.
Week 15 (Apr 26 – 30)	**Suppl. Material**	**Frequency Distributions** **Measures of Central Tendency** **Measures of Variation**	
Final Exam (Comprehensive): As posted on the Registrar Website			