King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics

Fall 2015 (Term 151)

SYLLABUS

Course : **Math 131**
Title : **Finite Mathematics**
Textbook : Contemporary Introductory Mathematical Analysis for Business, Economics, and the life and Social Sciences, by Ernest F. Haeussler, Richard S. Paul, and Richard J. Wood, 13th edition.

Week	Date	Sec.	Material	Selected Problems
1	Aug. 23-27	1.1 1.3	Applications of Equations Applications of Inequalities	**1**,4,**12,16,**20,25,**33,36**,43 1,2,**4,**5,6,7,**9,10,11**,12
2	Aug.30-Sep.03	3.1 3.2	Lines (Review) Applications and Linear Functions	12,14,32,56,58,64,66,67,69,71,72 16,17,18,20,24,25,26,31
3	Sep. 06-10	3.3 3.4	Quadratic Functions (Review) Systems of Linear Equations	18,25,26,27,28,2930,31,33, 34,3610,16,25,26,28,29,34,37,38,39,41
4	Sep. 13-17	3.5 3.6	Nonlinear Systems Applications of Systems of Eqns.	10,16,25,26,28,29,34,37,38,39,41 4,6,7,9,10,12,13,14,15,16
Sep. 20- 28: Eid Al-Adha Vacation				
5	Sep. 29- Oct. 1	7.1 7.2	Linear Inequalities in Two Var. Linear Programming	2,4,10,16,18,20,21,22,24,28,29 3,4,6,10,12,13,14,15,16,17,18
6	Oct. 4-8	7.3 6.4	Multiple Optimum Solutions Solving Systems by Reduction	1,2,3,4 17,23,25,27,28,29,30,31,32
7	Oct. 11-15	6.5 7.4	Solving Systems by Reduction The Simplex Method	4,6,8,10,12,19,21,22,24 4,5,8,12,14,16,17,18,19
8	Oct. 18-22	7.8 5.1	The dual (Example 3 excluded) Compound Interest	4,6,9,10,12,13,14,15,17 2,8,10,12,18,19,20,23,24,26
9	Oct. 25-29	5.2 5.3	Present Value Interest Compounded Continuously	2,4,6,8,10,11,14,16,17,18,19,21,22,24
10	Nov. 1- 5	5.4 8.1	Annuities Basic Counting Principle and Perm.	8,10,14,16,18,20,23,24,25
11	Nov. 8- 12	8.2 8.3	Combinations. Other Count. Princip. Sample Spaces and Events	2,5,10,11,14,15,17,18,23,27,28,30,31 2,3,6,7,8,9,14,22,26,27,28,29,30
12	Nov. 15- 19	8.4 8.5	Probability Cond. Prob. and Stoc. Proc.	4,10,16,18,19,21,23,24,27,29,31,32 2,9,11,12,14,16,17,23,24,26,36,37,38
13	Nov. 22- 26	8.6 8.7	Independent Event Bayes' Formula	2,4,7,8,13,14,15,20,23,25,27,28,29,31, 1,2,3,4,5
14	Nov. 29- Dec. 3	9.1 9.2	Discrete Rand. Var. and Exp. Value The Binomial Distribution	3,4,5,6,9,11,12,13,15,16,18,20 4,5,10,12,13,15,16,17,19,20,21,22,23
15	Dec. 6- 10	16.1 16.2	Continuous Random Variables The Normal Distribution	1,2,3,4,5,6,7,8,9,10,11 2,8,9,10,14,16,17,18,19,20,21,22
16	Dec. 13- 14		Review	

Grading Policy:

Quizzes: 20% 5 quizzes (20 minutes each)

Exam 1: 20% (90 minutes , October 11 (Material of weeks 1-5 Written)

Exam 2: 20 % (90 minutes, November 8 (Material of weeks 6-9 Written)

Final : 40% (150 minutes) **Comprehensive** (Material 1-9 MCQ, Material 10-15 Written)

* DN policy will be adopted according to KFUPM regulations (from 9 absences)
* The questions of the quizzes and exams are based on the examples and exercises handled in class, homework, and the exercises of the textbook.
* **No makeup test** will be given under any circumstance. If a student misses a test for a legitimate reason (e.g., medical emergency), his final grade will be determined based on the non-missed tests.

Learning Outcomes:

- Understand and explain a variety of mathematical structures that do not involve infinite processes and limits
- Solve systems of linear equations
- Perform matrix operations
- Solve linear programming problems.
- Apply formulas from the mathematics of finance to solve problems related to purchases and investments
- Use permutations and combinations appropriately
- Calculate probabilities
- Calculate expected values for random variables
- Compute variance and standard deviation
- Apply mathematical skills to practical problems such as input-output analysis, inventory planning, optimal production schedules, insurance probabilities, and traffic patterns

Office Hours and Contact Information:

Office hours : Sunday/Monday/Tuesday 10:30-11:30 a.m.
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