جامعة الملك فهد للبترول والمعادن
King Fahd University of Petroleum & Minerals

KING FAHD UNIVERSITY OF PETROLEUM & MINERALS

DEPARTMENT OF MATHEMATICS & STATISTICS

DHAHRAN, 31261, Kingdom of Saudi Arabia

MATH 131: Finite Mathematics

Term 142

Instructor: **Mr. Yassir M. Khalid**

Office: Building – 5, Room – 304 **Phone:** 4181 **E-mail:** ykhalid@kfupm.edu.sa

Office Hours: Sunday, Tuesday and Thursday: **09:00 – 9:50** and from **12:30 – 13:40** (or by appointment).

For regular announcements, students are advised to check the **Blackboard** regularly.

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 the mathematics of finance.

Credit: (3 – 0 – 3).

Prerequisite: One year preparatory mathematics or its equivalent.

Textbook:

F. Haeussler, S. Paul, & J. Wood, ***Introductory Mathematical Analysis for Business, Economics, and the life and Social Sciences*** (13ed), Pearson, 2011.

Important Notes on Grades & Academic Integrity:

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

Activity	Weight
Class Activities[1]	20% (80 points)
Major Exam I (Sections 1.1, 1.3, 3.1-3.6, and 6.4-6.5) **Date:** Wednesday, March 4, 2015 (Week 6). **Time:** from 04:00-5:30pm. **Location:** Building 59, Room 1001.	20% (80 points)
Major Exam II (Sections 7.1-7.4, 7.8, 5.1-5.4, and 8.1-8.2) **Date:** Tuesday, April 21, 2015 (Week 12). **Time:** from 04:00-06:00pm. **Location:** Building 59, Room 1001.	25% (100 points)
Final Exam (Comprehensive) **Date:** Monday, May 18, 2015. **Time:** from 08:00-11:00am. **Location:** Building 14, Room 108.	35% (140 points)

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 accumulates **9**, or more, unexcused absences will receive a **DN** grade.

Exam Questions:

- ❖ The questions of the common exams are based on the examples, homework problems, and the exercises of the textbook.
- ❖ While the first two major exams are essay/written type exams, the **Final Exam** is a multiple choice questions (MCQ) exam, with 180-minutes duration and 28 problems.

Missing Exam I or Exam II:

- ➢ No makeup exam will be given under any circumstance. When a student misses Exam I or Exam II 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.

[1] Class activities are based on attendance (2%), homework (10%), and six quizzes (8%). Quizzes are of written type and not of multiple choice type questions. Every quiz has a 20-minutes duration.

Course Schedule[2]

Week # (Dates)	Sections	Topics
Week 1 (Jan 25 – 29)	**1.1** **1.3**	**Applications of Equations** **Applications of Inequalities**
Week 2 (Feb 1 – 5)	**3.1** **3.2** **3.3**	**Lines (Review)** **Applications and Linear Functions** **Quadratic Functions**
Week 3 (Feb 8 – 12)	**3.4** **3.5** **3.6**	**Systems of Linear Equations** **Nonlinear Systems** **Applications of Systems of Equations**
Week 4 (Feb 15 – 19)	**6.4** **6.5**	**Solving Systems by Reductions** **Solving Systems by Reductions (continued)**
Week 5 (Feb 22 – 26)	**7.1** **7.2**	**Linear Inequalities in Two Variables** **Linear Programming**
Week 6 (Mar 1 – 5)[3]	**7.3** **7.4**	**Multiple Optimum Solutions** **The Simplex Method**
Week 7 (Mar 8 – 12)	**7.8**	**The Dual (Exclude Example 3)**
Week 8 (Mar 15 – 19)	**5.1** **5.2**	**Compound Interest** **Present Value**
(March 22 – 26) Midterm Vacation		
Week 9 (Mar 29 – Apr 2)	**5.3** **5.4**	**Interest Compounded Continuously** **Annuities**
Week 10 (Apr 5 – 9)	**8.1** **8.2**	**Basic Counting Principle and Permutations** **Combinations and Other Counting Principles**
Week 11 (Apr 12 – 16)	**8.3** **8.4**	**Sample Spaces and Events** **Probability**
Week 12 (Apr 19 – 23)[4]	**8.5** **8.6**	**Conditional Probability** **Independent Events**
Week 13 (Apr 26 – 30)	**9.1** **9.2**	**Discrete Random Variables and Expected Value** **The Binomial Distribution**
Week 14 (May 3 – 7)	**16.2**	**The Normal Distribution**
Week 15 (May 10 – 14)	**Guest assigned reading**	**Frequency Distributions** **Measures of Central Tendency** **Measures of Variation**
Final Exam (Comprehensive): as posted on the registrar website		

[2] For ***Important Dates*** and ***Academic Calendar***, check the Registrar's site: **http://regweb.kfupm.edu.sa/**
[3] Major Exam I is scheduled on **Wednesday, March 4** (Week 6).
[4] Major Exam II is scheduled on **Tuesday, April 21** (Week 12).

Homework Problems[5]

Section	Homework Problems	Due Week
1.1	9, 12, 16, 21, 25, 31, 33, 43	**Week 2**
1.3	2, 4, 6, 7, 9, 10, 12	
3.1	8, 13, 32, 58, 65, 71, 72	**Week 3**
3.2	15, 17, 19, 20, 24, 26	
3.3	13, 15, 17, 29, 30, 31, 32, 33	
3.4	6, 15, 19, 35, 36, 40, 41	**Week 4**
3.5	1, 3, 6, 12, 13	
3.6	3, 7, 9, 13, 15, 17, 18, 20	
6.4	17, 20, 23, 27, 29, 30, 32	**Week 5**
6.5	1, 6, 10, 13, 19, 21, 24	
7.1	18, 20, 22, 24, 28, 29	**Week 6**
7.2	5, 10, 13, 17, 18	
7.3	1, 2, 3, 4	
7.4	5, 8, 12, 16, 19	**Week 7**
7.8	2, 4, 5, 10, 14, 15	
5.1	8, 10, 12, 18, 19, 20, 23, 24	**Week 8**
5.2	4, 8, 10, 11, 14, 16, 19, 21	
5.3	5, 10, 12, 14, 16, 19, 21, 22	**Week 9**
5.4	6, 10, 11, 16, 19, 22, 28, 29, 30	
8.1	6, 8, 10, 19, 22, 25, 29, 32, 37, 40	**Week 10**
8.2	6, 10, 14, 17, 23, 25, 26, 30, 34, 38	
8.3	4, 11, 18, 20, 22, 26, 27, 28, 29	**Week 11**
8.4	6, 10, 16, 19, 21, 23, 24, 28, 36, 42	
8.5	2, 10, 14, 17, 23, 26, 37, 41, 47	**Week 12**
8.6	1, 6, 20, 23, 25, 27, 31, 32, 35, 36	
9.1	2, 5, 9, 11, 15, 16, 18, 21	**Week 13**
9.2	4, 5, 10, 11, 17, 23, 25, 26	
16.2	2, 5, 8, 10, 14, 17, 19, 20	**Week 14**

Tips on how to enhance your problem-solving abilities:

1. You are urged to practice (but not memorize) more problems than the above 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 problems, 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.

[5] Usually, once a section is finished, you should submit its homework problems. Please do all the homework assignments on time (as listed on the last column). Late homework will be penalized.