

**KUWAIT UNIVERSITY**

**Department of Mathematics, College of Science**

**MATH 115 – Finite Mathematics**

**Spring Semester 2017-2018**

*Textbook:* "Finite mathematics for Business, Economics, Life Sciences, and Social Sciences", Thirteenth Edition.

**Authors:** Raymond A. Barnett; Michael R. Ziegler; Karl E. Byleen.

***Contents***

1. Linear Equations and Graphs

1.1 Linear Equations and Inequalities

1.2 Graphs and Lines

4. Systems of Linear Equations; Matrices

4.1 Review: Systems of Linear Equations in Two Variables

4.2 Systems of Linear Equations and Augmented Matrices

4.3 Gauss-Jordan Elimination

5. Linear Inequalities and Linear Programming

5.1 Linear Inequalities in Two Variables

5.2 Systems of Linear Inequalities in Two Variables

5.3 Linear Programming in Two Dimensions: A Geometric Approach

6. Linear Programming: The Simplex Method

6.2 The Simplex Method: Maximization with Problem Constraints of the Form  $\leq$

6.3 The Dual; Minimization with Problem Constraints of the form  $\geq$

7. Logic, Sets, and Counting

7.2 Sets

7.3 Basic Counting Principles

7.4 Permutations and Combinations

8. Probability

8.1 Sample Spaces, Events, and Probability

8.2 Union, Intersection, and Complement of Events; Odds

8.3 Conditional Probability, Intersection, and Independence

8.4 Bayes' Formula

8.5 Random Variables, Probability Distribution, and Expected Value

11. Data Description and Probability Distributions

11.2 Measures of Central Tendency

11.3 Measures of Dispersion

### **RECOMMENDED EXERCISES**

<i>Section</i>	<i>Exercises</i>
1.1	3, 9, 11, 12,20,21,24,28, 34, 63 ,64
1.2	7,10, 16, 25, 30, 33, 44, 49,53,54,
4.1	9,16,17,18,21,25,30, ,63, 77, 78
4.2	1-8, 15 - 22, 49-59, 75, 77.
4.3	11, 18, 30, 33,38, 48, 50, 68,76, 85.
5.1	2,3,5, 9 – 22,29,31, 41,42,43
5.2	1-4, 13, 15,21, 23, 25,41,47,48
5.3	5-8,17 - 22, 27,28,49,50
6.2	5,6, 9 - 12, 13, 15, 18, 21, 23, 27, 49, 50
6.3	1 - 11, 13, 15, 21, 22, 31
7.2	7 - 22, 29 -44, 47
7.3	8 - 14, 17, 19, 21, 23, 25, 26, 35, 39 - 41, 49 - 51, 63
7.4	15 -17, 27 - 30, 37 - 39, 43 - 49, 63 - 66, 71, 72, 75, 76, 78
8.1	1 - 3, 15 - 20, 25, 26, 31 - 38, 41, 50 - 56, 79 - 84, 93 -96
8.2	7 - 12, 33 - 36, 39 - 42, 49 - 54, 57, 79, 83, 85
8.3	9 - 11, 15 - 17, 45 - 48, 51,53, 58,59, 71, 73, 75, 78,82
8.4	1 - 12, 31 - 38, 43, 55, 59
8.5	1, 2, 7, 8, 15 - 21, 41, 42, 53
11.2	
11.3	

Any student who finds a difficulty in a particular topic is recommended to do further exercises from the textbook.

**Assessment:**

The course will be graded based on:

1. Two in-term examinations( 50% ; 25% for each exam)
2. A comprehensive final examination (40%)
3. Three quizzes and the best two are considered (10%)

### *Examination Schedule*

<i>Examination</i>	<i>Day &amp; Date</i>	<i>Time</i>	<i>Suggested Sections</i>
<i>1<sup>st</sup> Midterm</i>	<i>Thu. 15-3-2018</i>	<i>6:30 - 8:00 pm</i>	<i>1.1 - 5.3</i>
<i>2<sup>nd</sup> Midterm</i>	<i>Sun. 8-4-2018</i>	<i>6:30 - 8:00 pm</i>	<i>6.1 – 8.2</i>
<i>Final</i>	<i>Sun. 20-5-2018</i>	<i>3:00 - 5:00 pm</i>	<i>Entire Content of the Course</i>

### **Examination and test regulations:**

- Calculators and electronic communication devices, such as mobiles telephones are strictly prohibited from rooms in which an examination or test is taking place.
- Supervisory staff will not answer queries regarding a question posed or its method of solution, part of the objective is to assess the student's understanding and ability to solve the question.
- All the above is subject to change.