

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

**MATH 105: FINITE MATHEMATICS**

*Fall 2018 (181)*

**Instructor:** Musawar Amin Malik

**Office:** Building 5, Room 306   **Phone:** 2396   **Email:** mmalik@kfupm.edu.sa

**Office Hours:** UT 10:00 am – 11:00 am, UT 12:00 – 1:00 pm and by Appointment

**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.

**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 mathematics of finance.

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

**Assessment**

Activity	Weight
<i>Class Work</i>	5%
<i>First Major Exam</i> .(Sections: 1.1, 1.3, 3.1 - 3.6, 6.4 - 6.5) <i>Tuesday October 2, 2018</i>	20%
<i>Second Major Exam</i> (Sections: 5.1 - 5.4, 7.1 - 7.4, 7.8) <i>Wednesday November 7, 2018</i>	25%
<i>Third Major Exam</i> (Sections: 8.1-8.6) <i>Wednesday November 28, 2018</i>	20%
<i>Final Exam (Comprehensive)</i> As posted on the Registrar Website	30%

**Grade Assignment**

Score	87 – 100	80 – 86	75 – 79	70 – 74	65 – 69	60 – 64	55 – 59	50 – 54
Grade	A+	A	B+	B	C+	C	D+	D

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 (Sep 2 – 6)	<b>1.1</b> <b>1.3</b>	<b>Applications of Equations</b> <b>Applications of Inequalities</b>	9,12,16,21, 25, 31, 33, 43. 2, 4, 6, 7, 9, 10, 12.
Week 2 (Sep 9– 13)	<b>3.1</b> <b>3.2</b> <b>3.3</b>	<b>Lines (Review)</b> <b>Applications and Linear Functions</b> <b>Quadratic Functions</b>	8, 13, 32, 58, 65, 71, 72. 15, 17, 19, 20, 24, 26, 31. 27, 29, 31, 34, 36, 39, 40.
Week 3 (Sep 16 – 20)	<b>3.4</b> <b>3.5</b> <b>3.6</b>	<b>Systems of Linear Equations</b> <b>Nonlinear Systems</b> <b>Applications of Systems of Equations</b>	26, 28, 29, 35, 36, 40, 41. 6, 9, 12, 14, 15, 16. 3, 7, 9, 15, 17, 18, 19, 20.
<b>Sunday</b> <b>September 23</b>	<b>National Day Holiday</b>		
Week 4 (Sep 24 – 27)	<b>6.4</b> <b>6.5</b>	<b>Solving Systems by Reductions</b> <b>Solving Systems by Reductions (cont.)</b>	17, 20, 23, 27, 29, 30, 32. 1, 8, 10, 13, 19, 21, 24.
<b>Saturday</b> <b>September 29</b>	<b>Normal Sunday Classes</b>		
Week 5 (Sep30 - Oct4)	<b>7.1</b> <b>7.2</b>	<b>Linear Inequalities in Two Variables</b> <b>Linear Programming</b>	18, 20, 22, 24, 28, 29. 5, 10, 13, 14, 15, 17, 18.
Week 6 (Oct 7 – 11)	<b>7.3</b> <b>7.4</b>	<b>Multiple Optimum Solutions</b> <b>The Simplex Method</b>	1, 2, 3, 4. 5, 8, 12, 16, 17, 19.
Week 7 (Oct 14 – 18)	<b>7.8</b>	<b>The Dual (Exclude Example 3)</b>	4, 5, 10, 13, 14, 15.
Week 8 (Oct 21 – 25)	<b>5.1</b> <b>5.2</b>	<b>Compound Interest</b> <b>Present Value</b>	8, 10, 12, 18, 19, 23, 24. 4, 8, 10, 11, 14, 16, 19, 21.
Week 9 (Oct 28–Nov1)	<b>5.3</b> <b>5.4</b>	<b>Interest Compounded Continuously</b> <b>Annuities</b>	5, 10, 12, 14, 16, 19, 21. 10, 11, 19, 22, 28, 29, 30.
Week 10 (Nov 4 – 8)	<b>8.1</b> <b>8.2</b>	<b>Basic Counting Principle and Permutations</b> <b>Combinations and Other Counting Principles</b>	6, 8, 10, 19, 25, 26, 29, 32, 37, 38, 40. 6, 10, 14, 18, 23, 25, 26, 30, 34, 38.
Week 11 (Nov 11 – 15)	<b>8.3</b> <b>8.4</b>	<b>Sample Spaces and Events</b> <b>Probability</b>	3, 4, 11, 18, 22, 26, 27, 28. 1, 6, 20, 23, 25, 27, 31, 32, 35
Week 12 (Nov 18 – 22)	<b>8.5</b> <b>8.6</b>	<b>Conditional Probability</b> <b>Independent Events</b>	2, 10, 14, 17, 23, 26, 37, 41, 47. 1, 6, 20, 23, 25, 27, 31, 32, 35, 36.
Week 13 (Nov 25 – 29)	<b>9.1</b> <b>9.2</b>	<b>Discrete Random Variables and Expected Value</b> <b>The Binomial Distribution</b>	2, 5, 9, 11, 15, 16, 18, 21. 4, 5, 10, 11, 17, 23, 25, 26.
Week 14 (Dec 2 – 6)	<b>16.2</b>	<b>The Normal Distribution</b>	2, 5, 8, 10, 14, 17, 19, 20.
Week 15 (Dec 9 – 13)	<b>Suppl. Material</b>	<b>Frequency Distributions</b> <b>Measures of Central Tendency</b> <b>Measures of Variation</b>	
Final Exam (Comprehensive): As posted on the Registrar Website			