MATH 215 Applied Finite Mathematics Syllabus

Summer 2015

Lecture:	M W R 6:00-8:05 SOND 109
Instructor:	Ms. Teresa Lebair
Email:	teresa.lebair@umbc.edu
Office:	Sherman Hall 218
Office Hours:	M W R 3:00-5:00 and by appointment
Textbook:	*Finite Mathematics*, Waner/Costenoble, 6th Edition

Course Description

We will first cover some basic linear algebra concepts using matrices including solving linear equations and matrix arithmetic. This will be followed by a discussion of matrix applications such as game theory, Leontieff input-output models, and using the simplex method to solve linear optimization problems. Next, we will go over concepts related to sets and counting, including set operations, set cardinality, permutations, and combinations. Finally, we will cover several fundamental concepts of probability, such as sample spaces/events, relating probability and combinatorial counting techniques, conditional probability, event independence, Bayes' Theorem, and random variables.

Grading Policy

The usual A (90%-100%), B (80%-90%), C (70%-80%), D (60%-70%), F (0%-60%) grading system will be used in this course. Points will be distributed as follows:

Homework	best 10 of 12 homeworks worth 5 points each	50 points
Quizzes	best 5 of 7 quizzes worth 20 points each	100 points
Exam	2 exams worth 100 points each	200 points
Final Exam		150 points
Total		500 points

- Homework assignments must be turned in at the **start** of class. Late assignments with receive at best only partial credit, and at worst no credit. For each assignment, I will grade several randomly selected problems.
- There will be **no make-up quizzes**, unless you miss a quiz for a school sponsored event (notify me in advance).
- Make-up tests will be given at my discretion, provided there is an acceptable reason for missing the test and if I am notified in advance.
- Your final exam is on the last day of class, August 13^{th} in SOND 109. It will be a cumulative exam, with emphasis on the material covered after the second exam. I will replace your lowest non-final exam percentage with your final exam percentage if it helps your grade.

Calculators

I highly recommend having a graphing calculator without symbolic manipulation capabilities for this class, such as a TI-83, TI-84, TI-85, or TI-86. You may use a scientific or graphing calculator on exams, quizzes, and homework. However, you may not use a machine with symbolic manipulation capabilities on quizzes or exams, i.e., no TI-89's, TI-92's, HP-48's, laptops, or cellphones.

Expectations

I expect you to treat me and your fellow classmates professionally, and with respect, in order to make the class conducive to learning. Doing things such as talking while I am lecturing, repeatedly coming late to class, using laptops during lecture, etc., is disruptive, as these actions are distracting for me and your classmates. Consequently, laptop use is not permitted during lecture. Cellphones may only be used for purposes related to lecture material, e.g., using a phone as a calculator for classwork. Students who continue to be disruptive will be asked to leave class.

Academic Integrity

I take academic integrity very seriously. By enrolling in this course, each student assumes the responsibilities of an active participant in UMBC's scholarly community in which everyone's academic work and behavior are held to the highest standards of honesty. Cheating, fabrication, plagiarism, and helping others to commit these acts are all forms of academic dishonesty, and they are wrong. Academic misconduct could result in disciplinary action that may include, but is not limited to, suspension or dismissal. To read the full Student Academic Conduct Policy, consult the UMBC Student Handbook, or the UMBC Integrity webpage www.umbc.edu/integrity.

Accommodations

Students with disabilities who want to request accommodations should talk to me and UMBC Student Support Services (MP 213, Phone No. 410-455-2459).

Schedule

I may make changes to the schedule as the semester goes on and will announce them in class and/or by email. It is your responsibility to stay informed of these changes.

Week		Date	Section(s)	Topics
1	M	July 6	3.1, 3.2	Course Overview, Linear Systems with Two Unknowns, Solving Linear Systems with Matrices
	W	July 8	3.2, 3.3	Solving Linear Systems with Matrices and Applications
	R	July 9	3.3, 4.1	Linear System Applications Matrix Addition and Scalar Multiplication **Quiz 1 on 3.1-3.2**

2	M	July 13	4.2, 4.3	Matrix Multiplication, Matrix Inversion
	W	July 15	4.4	Game Theory **Quiz 2 on 3.3, 4.1-4.2**
	R	July 16		Review and Exam **Exam 1 on 3.1-3.3 and 4.1-4.3**
3	M	July 20	4.5, 5.1	Input-Output Models, Graphing Linear Inequalities
	W	July 22	5.2, 5.3	Solving Linear Programs by Graphing, Simplex Method **Quiz 3 on 4.4, 4.5**
	R	July 23	5.3, 5.4	Simplex Method **Quiz 4 on 5.1-5.2**
4	M	July 27	6.1, 6.2	Set Operations and Cardinality **Quiz 5 on 5.3-5.4**
	W	July 29	6.3, 6.4	Addition and Multiplication Principles, Permutations and Combinations
	R	July 30		Review and Exam **Exam 2 on 4.4-4.5, 5.1-5.4, 6.1-6.2**
5	M	Aug. 3	7.1, 7.3	Sample Spaces, Events, and Probability **Quiz 6 on 6.3-6.4**
	W	Aug. 5	7.4	Probability and Counting Techniques
	R	Aug. 6	7.5	Conditional Probability and Independence **Quiz 7 on 7.1, 7.3-7.4**
6	M	Aug. 10	7.6	Bayes' Theorem
	W	Aug. 12	8.1, 8.2	Random Variables and Distributions (we may or may not cover 8.2)
	R	Aug. 13		**Final Exam in SOND 109**