University of Connecticut

Mathematics for Business & Economics

Dr. Bill Schwendner
Math 1070Q

Spring 2013
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Course: Mathematics for Business & Economics, 3 credits, Tuesdays, 6-840pm
Textbook: **Applied Finite Mathematics,** Customer Edition by *E. Tomastik and J. Epstein.*

Objectives: Four major topics are studied: Math of Finance, Linear Programming, Probability and Statistics. Specifically, the course will study: finance formulas, linear equations, inequalities, exponents, logarithms, matrices, linear programming, optimization, probability and basic statistics, and how it is used to solve and optimize business applications. This does not only mean that you should be able to work through problems similar to ones seen in homework, but you should be have the ability to articulate the ideas presented in the course in a clear and coherent manner as well and be prepared to solve new business-related quantitative problems.

Prerequisite: Math 1010, 1011 or 1014, or equivalent. A solid understanding of algebra is required for this course. This is neither an introductory nor an Intermediate Algebra class (these are prerequisites). Also you should be familiar with business concepts/principles, e.g., P = R - C.

Expectations: I expect you to do most of your learning outside of the classroom. You should expect to spend between 10-15 hours per week re-reading the lecture notes, reviewing worked-out textbook problems, studying and working on this material outside of class. Mathematics is learned by doing problems. We will not have time in class for you to do a lot of mathematics yourself. However, I do expect you to come to class and participate actively in class discussions. If you miss a class, I expect you to find out what was covered. You are responsible for everything that goes on in the class.

Homework: This is work you do outside of class. We will devote little class time to discussing homework problems. Homework questions can be addressed during office hours or with the math tutor. I encourage you to put a lot of effort into figuring out a problem before consulting assistance. Homework may be collected and graded periodically. Additional take-home problems sets may also be assigned (and graded) throughout the semester. Math is learned by doing problems.

Tutoring: Math tutors are available through the Academic Services Center.

Lecture Notes: Required lecture notes are on HuskyCT. Please come to class with these notes.

Required Reading *New York Times* – Find articles where principles or concepts we are studying are used.

Exams/Grading: 4 quizzes, a comprehensive midterm and comprehensive final exam are planned. Problems will test your understanding of the principles, process and concepts; rather than repeating what you see in class.

All quizzes/tests will be closed notes and closed book. There will be **no make-ups**. You are responsible to take the quiz/exam on the scheduled date. Extra credit is not given.

Your final grade will be determined as follows:

Test	***Value***	***Target***
Your best 3 quiz grades + problem sets	35%	See plan
Comprehensive midterm	30%	See plan
Comprehensive final	35%	Week of 5/6

Integrity Policy A fundamental tenet of all educational institutions is academic honesty; work depends upon respect for and acknowledgment of the work and ideas of others. Misrepresenting someone else's work as one's own work is a serious offense in any academic setting and it will not be condoned.

Academic misconduct includes, but is not limited to, providing or receiving assistance in a manner not authorized by the instructor in the creation of work to be submitted for academic evaluation (e.g., papers, projects, quizzes, tests – whether online or in class); presenting as one's own any ideas, words or calculations of another for academic evaluation; doing unauthorized academic work for which another person will receive credit or be evaluated; using unauthorized aids in preparing work for evaluation (e.g., unauthorized calculators, programs or formulas loaded into your calculator, etc); and presenting the same or substantially the same papers or projects in two or more course without the explicit permission of the instructors involved.

A student who knowingly assists another student in committing an act of academic misconduct shall be equally accountable for the violation, and shall be subject to the sanctions and other remedies described in The Student Code.

Sanctions shall include, but not limited to, a letter sent to the Dean of Students of the University, a grade of 0 on the assignment, quiz or exam; a grade of F for the course.

Office Hours: T,TH 530-600 pm/840-900pm or by appointment.

Week	Dates	Section	Topic	Exercises
1	1/22	F.1	Simple Interest and Discount	357/1,5,9,13,21,27,29
		F.2	Compound Interest	366/3,5,13,17,34
		F.3 F.4	Annuities & Sinking Funds Amortization	374/3,7,17,21,23 383/1,7,11,15,31,43
2	1/29	1.1	Mathematical models	13/1,3-5,7,10,13,15,23,27,29,31,37,51
		1.2	System of Linear Equations	26/1,5,9,13,17,19,31
		1.3	Gauss Elimination Sys Linear Equations	45/1-13,29,33,37,39,47
3	2/5	1.3	Gauss Elimination Sys Linear Equations	45/1-13,29,33,37,39,47
		1.4	System of Linear Equations with Non-Unique Solutions	62/1-12,17-25odd,51,56
			Quiz 1	
4	2/12	1.5	Method of Least Squares	74/10,13,19,31
		2.1	Introduction to Matrices	94/1,3,21,43
		2.2	Matrix Multiplication	108/1-15odd,35,41,53
5	2/19	2.3	Matrix Inverse	122/1-13odd,27,48
		2.4	Additional Matrix Applications	136/1,3
		3.1	Linear Programming Problems	150/1-13odd,15,21
6	2/26	3.1	Linear Programming Problems	150/1-13odd,15,21
		3.2 3.3	Graphing Linear Inequalities Graphing Solutions of Linear Programming Problems, Post Optimal Analysis	165/1-15odd,25,31,43,49-59odd 177/1-7,11,23-31odd,41 182/4,6
			Quiz 2	
7	3/5	3.3	Graphing Solutions of Linear Programming Problems, Post Optimal Analysis	177/1-7,11,23-31odd,41 182/4,6
		4.1 4.2	Introduction to Sets Number of Elements in a Set	191/1-7,11,13,23-29odd,47,51 199/1-11odd,21,23,25
8	3/12		**Midterm**	
9	3/19		**Spring Break**	
10	3/26	4.3	Sample Space and Events	207/1-9odd
		4.4	Basic Probability	214/1-14,19,21,23,29
11	4/2	4.5	Rules of Probability	222/1-18,31,33
		4.6	Conditional Probability	234/1-17odd,25,27,37,39
12	4/9	4.7	Bayes' Theorem	243/1-7,9,21,25,31
		5.1	The Multiplication Principle and Permutation	262/1-21odd,25,27,31,35
		5.2	Combinations	270/1-21odd,25,27,29,31,35
13	4/16	5.3	Probability Applications of Counting Principles	276/1,3,5,7,10,11,25,27
		5.4	Bernoulli Trials	282/1-5odd
		6.1 6.2	Random Variables and Statistics Measures of Central Tendency	300/1-9odd,11,19,21 312/1-11odd,33,35,37
			Quiz 3	
14	4/23	6.3	Measure of Spreads	325/1-9odd,19,21,25
		6.4	The Normal Distribution	3371-5odd,9,11,23
15	4/30		**Review Day**	
			Quiz 4	
16	Wk of 5/6		**Final Exam**	