

Math 110 §2, Fall 2010

Finite Mathematics

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Text: Lial, Greenwell, Ritchy, **Finite Mathematics**,
9th edition, Pearson-Addison Wesley

Course Description

Finite mathematics is a course originally developed in the 1960's at Dartmouth by John Kemeny to provide an introduction to highly applicable mathematics not requiring calculus concepts. The original course focused primarily on discrete probability, matrix algebra, linear programming, game theory, and Markov chains. The course has developed since to include a chapter on the mathematics of finance, with a special emphasis on annuities and their application to savings plans and loan amortization. Some sections will also do an introduction to statistics. Some selection is necessary, since the list of topics is a bit too much for a semester: we will do math of finance, solution of systems of linear equations using matrices, matrix algebra, an introduction to linear programming, some discrete probability, and Markov chains (which combine the probability with matrices). The topics are chosen for accessibility and for broad interest and utility, making this a good course for general education in mathematics.

Because this is a formal reasoning course I will expect you to understand the reasoning behind the mathematics as well as the algorithmic calculation and applications.

You will need a calculator with exponentiation and log keys for the section on math of finance. At the very end of the course we may make use of factorial, permutation, and combination keys as well. In class I will make some use of *Mathematica* and *Excel* to do calculations .

Exams and Grading

We will have three exams, each worth 100 points, and a final. The first exam covers math of finance: the second covers Matrix algebra, systems of linear equations, and linear programming; the third covers probability and Markov chains. The final covers the whole course; it can be used to replace the lowest exam score. Dates for the exams can be found on the calendar (on line at <http://www.iwu.edu/~lstout/Finite/FiniteF10Cal.html>). I will assign homework and will give occasional quizzes based on that homework so you (and I) can see how you are progressing in preparing for the exams; these are for our mutual information on your progress, not for a grade.

I will use a straight scale for determining grade. To allow flexibility at boundaries, I reserve the right to change the boundaries, but will draw them no higher than:

| | |
|-----|-------------|
| A : | 90% or over |
| A-: | [87,90) |
| B+: | [83,87) |
| B : | [78,83) |
| B-: | [75,78) |
| C+: | [70,75) |
| C : | [65,70) |
| C-: | [60,65) |
| D : | [50,60) |
| F : | below 50% |

Note: The line for passing will not move, the others *may* move downward.

Attendance Policy

I expect you to read the relevant sections of the book before the class where I will be discussing them. Classes and office hours are what you pay tuition for, so take advantage of them. If you don't come to class you will not learn the material with the same emphasis that I put on it. There is no deduction of points for classes missed.

Policy on Academic Integrity

Work handed in for a grade is expected to be your own work. On daily

learning there is something to be gained by talking with your fellow students: study groups and/or discussions on the material and homework are encouraged in this course. However, you do have to pay special attention of your ability to work independently: understanding the material and being able to solve problems on your own is what you need for quizzes and examinations. All quizzes and exams require all work to be done individually. Any cheating on exams or quizzes will be treated as a violation of the policy on academic dishonesty in the student handbook and will be reported to the Associate Provost.

Other issues

Please be courteous to the other members of the class: don't chat so they can't hear, and leave your cell phones off.

I have a rare inherited form of macula dystrophy which has gotten worse this summer, so my central vision is not good in my right eye. This makes it hard for me to read print and to see faces. Please help by writing clearly and reasonably large. If I pass you outside of class and don't seem to have recognized you, please don't take offense: I probably couldn't see your face. Since the facial expressions usually provide needed feedback to the professor which I am worried about not getting I'll try using a card system. Green means "All's well, I'm with you"; yellow means "I'm starting to get confused", and red means "Whoa! Try that again another way."