Math 256
Mathematical Models in Economics
Spring 2014
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1/6/14

About this course

This is a math course about mathematical modeling with applications to economics. We will be using the program Mathematica, for presenting problems and models, for formalizing and computing with these models, for simulations and experiments, and for homework assignments. Calculus is assumed, linear algebra and statistics would be helpful, interest in economics is expected, and some prior computer experience would be useful. No previous experience with Mathematica is required, but Mathematica will be used every day, and learning Mathematica will be one of the main objectives in this course.

There will be no midterm tests or final in this course. Grading will be on the basis of almost weekly homework assignments in the form of Mathematica notebooks to be completed and submitted, possible short in-class quizzes, and small group (2 or 3 to a group) final projects illustrating some economic question of your choosing, presenting a mathematical model addressing this question, and demonstrating the use of Mathematica in applying this model, projects submitted in written form as Mathematica notebooks with short presentations in class during the last week of class. Projects will be equivalent to about 2 homework assignments, with a corresponding time allotted.

There is no textbook for this course. Presentations of questions, models, and programs will all be in the form of Mathematica notebooks available online on OAK and, as a backup, at www.math.vanderbilt.edu/~tschantz/m256. PDF copies will also be online for reading, but it is intended that you download the notebooks and read and work through the examples using Mathematica. Homework assignments will be notebooks presenting questions to be answered and exercises to be completed using Mathematica. Completed notebook homework files should be submitted through the OAK system, or if necessary e-mailed to me at tschantz@math.vanderbilt.edu. You can get a student license for Mathematica through the Vanderbilt software store (softwarestore.vanderbilt.edu) or use lab computers, and time will be allotted in class for working on assignments with the opportunity for help with Mathematica.

The course meets MWF 1:10-2:00 in the Stevenson Center computer lab SC2200. Lectures will explain some economic question, give a model addressing this question, and then demonstrate the use of Mathematica implementing the model. Assignments will be explained and then time will be available to work on these with assistance in class. Assignments can be completed outside of class to be due
usually one week after being assigned.
My office hours will be MWF10-11 and by appointment in SC1507 and I will likely often be available after class. My office phone is (32)2-6664, though it’s probably better to e-mail me at tschantz@math.-vanderbilt.edu.

I have been involved in part-time economics consulting with Luke Froeb of the Owen graduate school of management here at Vanderbilt, devising and programming mathematical models to help understand various economic questions. This course reflects the kind of work I have been doing.

Next

Now that you have read about this course, you should go back to the OAK system, get the next Mathematica notebook 01.2-GettingStarted.nb and start learning Mathematica.