Introduction to Mathematical Economics 4808

Course Syllabus - Spring 2012

Econ 4808 Introduction to Mathematical Economics

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Course Description: Econ 4808 is a course that will improve your understanding of economics 15

The intent of this course is to teach you the language of mathematics and how to use it to better understand economics.

The ability to describe an economic model verbally, graphically and mathematically will make your life as an econ. major a lot easier.

The course considers the mathematics of, and economic applications of, equilibrium problems and derivatives, differentials, optimization (maximizing and minimizing functions like profit, costs and utility), and constrained optimization (e.g., maximizing utility subject to the budget constraint) and integration (consumer surplus). Applications include problems in consumer and producer theory, general equilibrium, welfare economics, growth and discounting, biology behavior, game theory, statistics, and econometrics.

Surf the course web page. You are responsible for knowing what you will be expected to do. Know what you are getting into.

Prerequisites: Principles of Economics (Econ 2010 and Econ 2020, or Econ 1000) are prerequisites, as are Econ 1078 (Mathematical Tools for Economists 1) and Econ 1088 (Mathematical Tools for Economists 2), or the equivalent. One or more semesters of Calculus will more than suffice for Econ 1078 and 1088. This course and Intermediate Micro Theory are definite complements. It is very important that you fulfill the prerequisites before you take this course, and still understand the material in the prerequisites. To be successful in mathematical economics, you need to first be comfortable with algebra and derivatives. If you have any questions as to whether you are [illegible] qualified to take the course, please talk to me ASAP (talk to me after class or email me).

If you took 1078 12 semesters ago and earned a C, you probably don't want to be here.

Who should take this course? I would recommend the course to anyone who likes math and likes economics, and to anyone who wants to understand the important role mathematics and models play in modern economics.

One does not really understand what economics is until one has studied it using different approaches, and mathematical approaches are a primary part of the toolbox of the economist.

This course is essential for anyone considering graduate work in economics. In general, mathematics is a much more integral part of economics than undergraduate economics majors imagine.

Click here for some additional comments and thoughts to help you decide whether to take the course.

Web page: My web site is located at http://www.colorado.edu/Economics/morey/index.html. From it you can link to the web page for Econ 4808, or you can go directly to the web page for the c[illegible] at

In class I will ask many questions. I also expect you to ask questions. In addition to these questions, I will often give you the opportunity to earn bonus points by verbally answering specific questions. Participation in this interactive process is completely voluntary.

Group Assignments: Some of the assignments will be done in groups. I will tell you in advance if an assignment is a group endeavor. You choose your group. The group will work together and turn in one assignment. Everyone in the group will get the same grade for that assignment. Group activities are one of many ways of giving you an incentive to work and study together. See the article about group study appended to the end of the syllabus. Note that if your group gets a grade of x on a group quiz, this does not imply that every member of the group knows the material at a x level.

Reviewing your answers to the problems and the exams is an integral part of the learning process. Therefore, if you come in to class when I hand back and discuss the answers, I will add one point (out of 10) to your quiz score. Note that adding a point to your score does not, by itself, increase your skills or level of understanding

Office Hours: My office hours are posted on the homepage for the course. Feel free to email me but note that it might take a day or more for me to respond. My office is Econ 122. To make an appointment, catch me after class or contact me by email (

Correct Class Behavior

An Aside: There is lots of software out there that can do algebra and calculus. One good example is called Mathematica. It can differentiate, integrate, solve systems of equations and create great graphics. Mathematica is available from the CU Office of Information Technology. Go to http://itc.colorado.edu/software-hardware/site-licenses/mathematica. It is [illegible]. While Mathematica will probably be [illegible] in the course, it could help you learn and solve problems. Of course, you [illegible] how to take a derivative. (Even if you have it, [illegible]

Mathematics and Religion:

Potential Dangers from Course

I.What to look for in "proofs"