ECON 409 Mathematical Economics

Spring 2001, TTH 2:00 - 3:15 in Rouss 1102

Charles Holt (924-7894 or holt@virginia.edu)
http://www.people.virginia.edu/~cah2k
office hours: TTH 9:45 - 10:45 in Rouss 119, and by appointment


This is a class designed to introduce you to the basic mathematical techniques used by professional economists and other quantitative social scientists: equations, derivatives, comparative statics analysis of equilibrium models, optimization, constrained optimization, integration and dynamic models, difference and differential equation models, and inequality constraints in linear and nonlinear optimization problems. The basic prerequisite is about two semesters of calculus, and in particular, I will assume that you already know how to differentiate simple expressions. (If you’re rusty, you may have to review Chapters 6 and 7 at the beginning of the semester, sooner than they appear on the syllabus). The purpose of the course is to prepare students for graduate work in economics and in the more quantitative MBA programs.

There will be homework assignments due on Thursdays, with a grading policy to be announced. You can miss any 3 assignments, but late papers (after the beginning of class) will not be accepted. There will be two tests and an exam. Grades: homework (20%), tests (20% each) and exam (40%).
Assignments

Jan 23 -25  Equilibrium Models: Chiang Chapters 1-3
   Homework 1 due Jan 25: 2.3 problem 4; 2.4 problems 4, 6; 2.5 problems 4,6; 3.2 problem 2; 3.3 problems 2, 3a; 3.5 problem 2.

Jan 30-Feb.1 Matrix Algebra: Chapters 4-5
   Homework 2 due Feb 1: 4.2 problem 2a,b, 6a; 4.3 problems 4a,b, 4.4 problem 2; 4.5 problem 4; 4.6 problem 2b; 5.1 problem 4; 5.2 problem 4a; 5.3 problem 4a, 6a; 5.4 problem 2a, 4a; 5.5 problem 2a,

Feb 6-8 Derivatives: Chapters 6-7
   Homework 3 due Feb 8: 6.2 problem 2; 6.4 problem 2; 6.6 problem 2; 6.7 problem 4; 7.1 problem 2; 7.2 problems 2, 8a,c; 7.3 problem 4; 7.4 problem 2a,c; 7.5 problem 2; 7.6 problem 2.

Feb 13-15 Differentiation and Comparative Statics: Chapter 8
   Homework 4 due Feb 15: 8.1 problem 4; 8.2 problems 2a, 4; 8.3 problem 2a; 8.4 problems 3, 4a; 8.5 problem 2; 8.6 problems 4, 6.

Feb. 20 review
Feb. 22 no class

Feb. 27 FIRST TEST on chapters 1-8
Mar. 1 assignment TBA

Mar. 6-8 Optimization: Chapter 9
   Homework 5: Mar 8

Mar. 13-15 Break

Mar. 20-22 Exponential and Logarithmic Functions: Chapter 10
   Homework 6: Mar 22

Mar. 27-29 Multivariate Optimization: Chapter 11
   Homework 7: Mar 29

Apr. 3-5 Constrained Optimization: Chapter 12 and 21.1 and 21.2
   Homework 8: Apr. 5

Apr. 10 -Dynamics and Integration: Chapter 13
   Homework 9: Apr. 10

Apr. 12 - no class

Apr. 17-19 Differential Equations: Chapters 14-15 (not 15.7)

Apr. 24-26 Difference Equations: Chapters 16-17 (not 17.4)

Final Exam: Wed. May 13, 9-12 am