Econ 2301: Mathematical Economics
Fall 2012

Class time and Location: Tuesday and Thursday 11:00am-12:15 pm, Oak 105

Instructor:	Ling Huang
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Office Hours:	Wednesday 2:00-4:00pm

Course Description:

The purpose of this course is to introduce the fundamental mathematical methods used for economic analyses such as matrix algebra, equilibrium analyses, and optimization theory etc. After completing this course, you are expected to be able to understand the basic math methods in economics.

Prerequisites:

Course prerequisites are: Econ 1200 or both 1201 and 1202; and Math 1071Q or 1110Q or 1121Q or 1131Q. For those of you who have already been familiar with some of the techniques covered in the course from taking prerequisites, you will benefit from seeing the applications to specific economic problems. If you want to develop even stronger math backgrounds, explore other math econ books [2-6] that have been placed on reserve in the library (call numbers are shown in parentheses).

Text Book and Readings:

[1]   Chiang, A., and K. Wainwright, Fundamental Methods of Mathematical Economics, Fourth Edition, McGraw-Hill, International Edition, 2005. **(Required)**

For reference purposes, other books on reserve in the Homer Babbidge Library include:

[2]   Baldani, Bradfield and Turner; Mathematical Economics, 2nd Edition, Thomson South-Western, 2005.

[3]   Hoy, M., et al., Mathematics for Economists, 2nd Edition, The MIT Press, 2001.

[4]   Klein, M., Mathematical Methods for Economics, 2nd Edition, Addison-Wesley, 2002.

[5]   Roberts, B., and D. Schulze, Modern Mathematics and Economic Analysis, W.W. Norton & Co., 1973 (HB, 74, M3, R56).

[6]   Simon, C., and L. Blume, Mathematics for Economists, W.W. Norton & Co., 1994 (HB, 135, B59, 1994).

Exercises, Exams and Grading

One of the best things to master this material is to practice and work through as many problems as possible. Class attendance is important to keep a record of your lecture notes and understand the materials. There will be about four times of in-class exercises. You can work in groups on exercises and use any mathematical software to check your answers, but keep in mind that your own unassisted exam performance will mainly determine your grade. As shown in the following course outline, there will be two in-class tests and one comprehensive final exam. The weights of your grade are allocated as the following:

Class participation	5%
First in-class test	20%
Second in-class test	25%
Final exam	50%

Questions and Appointments

If you have any questions, either stop by during my office hours (**W 2-4 pm**), or contact me by email (ling.huang@uconn.edu) to arrange an appointment. My office is in **Oak 329**.

Course Outline (subject to change)

Date	Topics

Week 1:   Week of Aug. 27, 2012
Syllabus
Basic review; Equilibrium and static analysis

Week 2:   Week of Sep. 3, 2012
Matrix Algebra

Week 3:   Week of Sep. 10, 2012
Matrix Properties
Linear models and application

Week 4:   Week of Sep. 17, 2012
Derivative, differentiation and comparative static analysis
In-class exercise

Week 5:   Week of Sep. 24, 2012
Exam 1 (textbook pp. 2-165) (Tuesday Sep. 25, 2012)
Exam comment;

Week 6:   Week of Oct. 1, 2012
Multivariate calculus (partial derivatives)
Exercise (Oct. 4)

Week 7:   Week of Oct. 8, 2012
Comparative static analysis of general function forms
Derivative test and optimization

Week 8:   Week of Oct. 15, 2012
Exponential and logarithmic functions

Week 9:   Week of Oct. 22, 2012
Multivariate unconstrained optimization
In-class exercise

Week 10:   Week of Oct. 29, 2012
                      Exam 2 (textbook pp. 166-346) (Tuesday Oct. 30, 2012)
                      Exam comment

Week 11:   Week of Nov. 5, 2012
                      Constraint in optimization
                      Multivariate optimization with constraint

Week 12:   Week of Nov. 12, 2012
                      Multivariate optimization with constraint continued
                      In-class exercise

Week 13:   Week of Nov. 19, 2012
                      Thanksgiving break

Week 14:   Week of Nov. 26, 2012
                      Economic applications

Week 15:   Week of Dec. 3, 2012
                      Further topics in optimization
                      In-class exercise

Week 16:   Week of Dec. 10, 2012
                      COMPREHENSIVE FINAL EXAM (Time: TBA)