Econ 2301
Mathematical Economics
Fall 2017

Instructor: Xin Liang
Lectures: Monday and Wednesday 12:20pm - 13:10pm, BCH302
Office Hours: Thursday 5:00pm - 7:00pm, Oak 307
Email: xin.liang@uconn.edu

TEXTBOOK

Fundamental Methods of Mathematical Economics, 4th edition (2005) by **A. Chiang, and K. Wainwright** (required).

PREREQUISITES

Course prerequisites are: Econ 1200, 1201 and 1202; Math 1071Q,1110Q ,1121Q and 1131. For those who have already been familiar with the contents covered in the course, you could benefit from learning the application in economic problems.

COURSE DESCRIPTION

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

GRADING

1) 2 Midterm Exams (20% each)
Midterm exams are pre-scheduled to be on **September 29th (week 5) and November 3st (week 10)**

2) Final Exam (30%)
Final exam will be **cumulative**.

3) Group presentation (15% each).
There will be 2 **in class group presentation** during the semester. Students are going to look for two economic models that can be solved by matrix method in the middle of the semester and that can be solved by the optimization method in the end of the semester, respectively. You are also going to analyze the results using the comparative static analysis method, present how you solve for them and the economic meanings behind the results in class. (4 students in one group)

- Practice set can be provided if needed.
- No make-up midterm exams are allowed unless official documentation from athletic center or hospital can be presented.

• If you have a conflict with your final exam time you must obtain official permission to schedule a make-up exam with the Office of Student Support and Advocacy (OSSA), see http://cetl.uconn.edu/syllabus-design/ for more information.

QUESTIONS AND APPOINTMENTS

If you have any questions, contact me by email or stop by during my office hours. Meeting in person is encouraged but please come with specific questions.

Course Outline

Week 1-Week 5

• Matrix Properties

• Matrix Algebra

• Linear models and application

• Derivative, differentiation and comparative static analysis

Midterm 1 (Sep 29th)

Week 6- Week 10

• Multivariate calculus

• Comparative static analysis of general function

• Derivative test

• Exponential and logarithmic functions

Midterm 2 (Nov 3st)

Week 11- Week 15

• Multivariate optimization with constraint

• Multivariate unconstrained optimization

• Further topics in optimization

• First-order differential equation and Solow model (if time allows)

(Schedule is subject to change according to class progress)