Course Description

This course introduces mathematical concepts and techniques commonly used in the undergraduate economics theory courses. This course covers the mathematics that is most frequently used by economists. Topics to be covered include equilibrium analysis, matrix algebra, comparative static analysis, unconstrained and constrained static optimization theory, and first order differential equations.

Students Learning Outcomes

The goal of this course is to learn mathematical approach in economics. Mathematical approach is quite useful in economics because the mathematical language is often more precise to explain the economics phenomenon and there exists lots theorems and applications in economics. Upon completion of the course, students are expected to demonstrate the ability of quantitative reasoning; students should be able to apply appropriate quantitative techniques to economic analysis and conduct economic analysis using mathematics.

Text

Chiang and Wainwright (2005) is the required textbook. The book is available at the bookstore.


Grading

2 mid-term exams 40%
1 final exam 40%
6 homework assignments 20%

There will be one midterm exam and one final exam. Each mid-term exams will count for 20% and the final exam will count for 40% of the final grade. Six (or seven) homework assignments will count for 20% of the final grade. Those homework assignments are designed to help you prepare more effectively for the exams. Those homework assignments are due at the beginning of the class. Attendance is mandatory.
**Classroom Policy**

Computers and cellular phones are not allowed to use in class.

**Exam Policy**

Unless otherwise notified, there will be no makeup exam for the exams. You will receive grade 0.0 if you miss the final exam. If you cannot take the exam on the scheduled time, you should contact me at least a week in advance to schedule a makeup exam. The mid-term exams will be at our regular class time. Final exam is cumulative. The final exam is scheduled at 9:45AM on December 11 (Tuesday).

**Help**

Office Hours: TR 9:15-10:15 or by appointment
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**Schedule**

Chapter 3: Equilibrium Analysis in Economics
Chapter 4 & 5: Linear Models and Matrix Algebra
Chapter 6: Comparative Statics and Derivative
Chapter 7: Rules of Differentiation
Chapter 8: Comparative Static Analysis
Chapter 9: Optimization
Chapter 10: Exponential Functions
Chapter 11: Case of More than One Variable
Chapter 12: Optimization with Equality Constraint
Chapter 13: Further topics in Optimization
Chapter 14: Economic Dynamics
Chapter 15: First Order Differential Equation