Economics 331

Mathematical Economics

Mr. Moody

Spring 2020

Text: Chiang and Wainwright, *Fundamental Methods of Mathematical Economics (Fourth Edition)*

All readings, except Chiang and Wainwright are available on Blackboard in the Course Documents section. Readings from earlier editions of Chiang are also available in Blackboard.

Tests: Midterm (33%), Wed, March 25, open book; Final (67%), May 13, 9:00, open book

With optional paper: midterm 25%, paper 25%, final 50%

Grading scale: A 90-100, B 80-89, C 70-79, D 60-69. Numerical grades are rounded up.

Add/drop deadline (Jan. 31); withdraw deadline (March 23).

Final exam: Wednesday May 13, 9am.

Maple: much of the material in this course is replicated using the Maple mathematical language; more information is available in the Course Information section of the Blackboard site.

Linear Algebra and General Equilibrium

Chiang and Wainwright, Chapters 1-5

Applied general equilibrium (Lenotief input-output analysis)

Linear Programming and Duality

Chiang Chapters 19,20 (Blackboard)
Bassi, L.J. "The Diet Problem Revisited," *The American Economist*, 20, Fall 1976, 35-39

The knowledge problem

Spontaneous order

Capitalism vs Socialism

Game Theory (two person zero sum games)

Chiang Game Theory (Blackboard)

Comparative Static Analysis

Chiang and Wainwright, Chapters 6-8

Macroeconomics

Allen, R.G.D. *Macro-Economic Theory*, ch. 7

Optimization

Chiang and Wainwright, Ch. 9-11.

Constrained Optimization

Chiang and Wainwright, Ch. 12

Nonlinear Programming

Chiang and Wainwright, Ch. 13
Baumol, W.J. *Economic Theory and Operations Analysis*. 4'th ed., 1977, Ch. 7
Kuhn, "Duality in Mathematical Programming"

Takayama, A. "Behavior of the Firm under Regulatory Constraint." *American Economic Review* (1969) 255-260.

Applications

The Envelope Theorem (Chiang and Wainwright Ch 13)

Mathematical History

The Oil Crisis and Entitlements