The American University
Department of Economics
Intro Mathematical Economics - 505 Fall 2008

Instructor: A. Tegene   Office hour: T 7 – 8, Roper Hall Rm.207
Grader:

Objective: The main objective of this course is to provide basic mathematical tools that are commonly used in all fields in economics – microeconomics, macroeconomics, econometrics, international trade and finance, public finance, money and banking, natural resources, urban and regional economics, labor economics, industrial organization, etc. Methods of Static Analysis, Comparative Statics, and Methods of Optimization will be introduced. The basic materials to be covered are Linear Algebra, Differential Calculus, Unconstrained and Constrained Optimization, and (time permitting) integral Calculus. Major emphasis will be on how these tools are used to solve practical and theoretical economic problems that arise in the behavior of households, firma, and markets.

Required Text: A.C. Chiang and Kevin Wainwright, *Fundamental Methods of Mathematical Economics*, 4th ed., McGraw-Hill.

Recommended Text: Klein, *Mathematical Methods for Economists*, 2nd ed., Addison Wesley.

Homework: Generally, there will be homework assignment every week. You have a week to do the assignments; and I will provide solution keys to homework assignments after you submit the assignments. Credit will be given only to the homework that is handed-in on the due date.

Dates	Topics	Readings
Aug. 26	Introduction & Review	Ch. 1-3, 4
Sep. 2 & 9	Linear Models & Linear Algebra Application: Static Analysis	Ch. 4&5
Sep. 16, 23 & 30	Differential Calculus Application: Comparative Statics	Ch. 6-8
Spt. 30, Oct. 7, Oct. 14 & 28	Unconstrained Optimization Application: Theory of the Firm	Ch. 9-11
Oct. 21	**Mid-term Exam**	

Nov. 4, 11 & 18	Constrained Optimization
	    Application: Consumer Theory
	        : Theory of the Firm
		Ch.12

Nov. 18 &	Integral Calculus	Ch.14
Dec. 2	Application: Investment &	
	Capital Formation	

Dec 9   **Final Exam**

Grading: Homework 10%; Mid-term 40%;   Final Exam 50%

AVOID MAKE-UP EXMS AS MUCH AS POSSIBLE SINCE MAKE-UP EXAMS WILL BE HARDER THAN REGULAR EXAMS!!!!