Syllabus
Economics 245 – Math for Economists
Professor Cecilia Fieler, University of Pennsylvania
Spring 2012

Evaluation
Homework (10%), midterm 1 (20%), midterm 2 (30%), final exam (40%).

Homework
Problem sets are assigned each Tuesday and due the next Tuesday, except for weeks in which there is an exam. Worst problem set dropped. Late homework not graded. You may work in groups, but you must write them up individually.

Midterms
In class on February 14 and March 27. Closed book and notes.

No make-up midterms. If you cannot take one or both midterms, the remaining evaluative items will be scaled up proportionately.

Final Exam

Prerequisites
The prerequisites are Math 114 or 115 (college calculus II – multivariate), and Econ 101 and 102 (intermediate micro and macro). Some knowledge of elementary probability theory, as is taught in Econ 103, will be helpful.

Hours
The class meets on Tuesdays and Thursdays, 9-10:30 in Stiteler Hall, B21. My office hours are Thursdays, 11:00am - 12:00 noon in 434 McNeil or by appointment. afieler@econ.upenn.edu.

Teaching Assistant
The TA is Yanhao (Max) Wei, yanhao@sas.upenn.edu. He will have primary responsibility for solution sets and grading – all questions about grading of particular problems and exams should be taken first to him. His office hours are Fridays, 5-7pm in 472 McNeil.

Notable Dates
The exams are on February 14, March 27 and May 8.

Texts
The following books should be available at Penn Bookstore.


• Mas-Colell, Andreu, Michael D. Whinston and Jerry E. Green, Microeconomic Theory, Oxford University Press, 1995.
The Dixit (D) text is short and sweet and cheap. The Simon & Blume (SB) text is long and heavy and expensive. The lectures will be more advanced than D and less advanced than SB. If you contemplate going to graduate school in economics or some related field, you should buy and master SB. Some homework problems will be taken from both books. Mas-Colell et al. is also long, heavy and expensive. I will draw only some proofs from it.

Relevant lecture notes from courses taught elsewhere can be found on the web at http://www.econphd.net/notes.htm#Mathematics. Many of the lecture notes found on this webpage are too advanced for this course. The online tutorial by Osborne is appropriate.

**Topics** We study the following mathematical ideas, primarily regarding optimization, and their uses in economics.

1. Review of differentiability. First-order conditions for optimality.
5. Convexity and concavity.
7. Second-order conditions for optimality.
9. Introduction to dynamic programming.