

Kansas State University – Department of Economics

## **ECON 940: Advanced Microeconomic Theory 1 Spring 2006**

Instructor: Dr. Philip Gayle

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Class Web Page: [online.ksu.edu/ECON\\_940/](http://online.ksu.edu/ECON_940/)

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**Office Hours:** Tuesdays & Thursdays 11:00am - 12:00pm, and by appointment

**Exam 1:** 01/31

**Exam 2:** 03/16

**Final Exam:** 05/08 (9:40am –11:30am)

**Prerequisite:** ECON 735 - Mathematical Economics

### **Course Description**

This is the first course in microeconomic theory for a Ph.D. student in economics. We will begin with a math review. The bulk of the math review draws on material from chapters 1 and 2 in *Advanced Microeconomic Theory* by Jehle and Reny. Other useful texts for the math review are, *Fundamental Methods of Mathematical Economics* by Alpha C. Chiang, *Optimization in Economic Theory* by Avinash Dixit, and the chapter on matrix algebra in *Econometric Analysis* by William Greene. We will then spend the remainder of the course studying microeconomic theory. This material is covered in *Microeconomic Theory* by Mas-Colell, Whinston and Green. The microeconomic section consists of three main parts. Part 1 is about consumer and production theory. Our discussion of consumer theory focuses on the relationship between consumer preference, consumer choice, and consumer demand while our discussion of production theory focuses on the relationship between, firm's technological possibilities and their production choice. Part 2 is about noncooperative game theory. We shall study in this part the basic elements of games, static games of complete and incomplete information, and dynamic games of complete and incomplete information. This will lay down the foundation to our analysis of individual behavior and interactions in economic situations where there is strategic interdependence. In part 3 we shall study market equilibrium and market imperfections. We start with the perfectly competitive market and characterize its equilibrium. Though the assumptions of perfect competition may be relaxed in several directions, time will only permit us to explore one direction: the existence of market power. Together with ECON 945 (Advanced Microeconomic Theory 2), this course will enable students to have a solid and comprehensive understanding of the fundamentals of microeconomic analysis.

**Main Textbook:** Mas-Colell A., Whinston M., and Green J., *Microeconomic Theory*, Oxford University Press, 1995.

### **Other Useful Texts in order of relevance to this course:**

- (1) Jehle G., and Reny P., *Advanced Microeconomic Theory*, Addison Wesley Longman, Inc., 1998.

- (2) Dixit A., *Optimization in Economic Theory*, Second edition, Oxford University Press, 1990.
- (3) Greene W., *Econometric Analysis*, (fourth edition), Prentice- Hall, Inc., 2000.
- (4) Chiang A., *Fundamental Methods of Mathematical Economics*, New York: McGraw-Hill, 1984.

### Grading

Grades are based on homework assignments (10%), exam 1 (20%), exam 2 (30%), and a final exam (40%). Letter grades are based on a curve. Normally, 90% and above correspond to an “A” however, this cutoff point will not increase and may even fall after a curve is applied. You are **strongly** encouraged to form study groups to discuss homework and lecture materials.

### Homework Assignments

There will be regular homework assignments. You will normally be given at least one week to work on each assignment. I want to emphasize that solving these problems is crucial for you to learn the course materials.

### Class Web Page: [online.ksu.edu/ECON\\_940/](http://online.ksu.edu/ECON_940/)

Various class materials (Lecture notes and Homework Assignments) will be available on the class web page. You can only access the class web page via K-State Online, which requires an e-ID and password. If you currently do not have an e-ID, you can create one for yourself by going to the K-State Online web page ([online.ksu.edu](http://online.ksu.edu)) and follow the instructions.

### Lecture Topics

Below is a tentative plan for the lectures. Any changes to the plan will be announced in class during the semester and you are responsible for updating the information.

Math Review Topics	Tentative Dates of Lectures
Elements of Matrix Algebra	01/12, 01/17
Elements of Set Theory	01/19, 01/24
Calculus and Optimization	01/26
<b>Exam 1</b>	<b>01/31</b>

Microeconomic Topics	Chapter Number	Tentative Dates of Lectures
Preference and Choice	1	02/02, 02/07
Consumer Choice	2	02/9, 02/14, 02/16
Classical Demand Theory	3	02/21, 02/23, 02/28, 03/02, 03/07
Production	5	03/9, 03/14
<b>Exam 2</b>		<b>03/16</b>
Basic Elements of Noncooperative Games	7	03/28, 03/30
Simultaneous-Move Games	8	04/04, 04/06, 04/11
Dynamic Games	9	04/13, 04/18, 04/20
Competitive Markets	10	04/25, 04/27, 05/02
Market Power	12	05/04
<b>Final</b>		<b>05/08</b>