**Economics 341 Prof. Stephen Schmidt**

**Current Topics in Microeconomics Spring 2016**

# Lippman 012 MWF 10:30-11:35

Office: Lippman 209 Office Hours: T/Th 10-12 and by appointment

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# Course Objectives

Economics 341 will cover game theory and its applications to economics, including information economics and experimental economics. Students will learn basic game theoretic models and some of their current applications; they will also learn to build and solve their own models of economic phenomena using the same tools, and apply those models to problems of policy and institutional design.

# Prerequisites

Students taking this course should have already taken Economics 241, Microeconomic Analysis.

**Enrollment:**

Enrollment in Economics 341 is limited to a total of 30 students. Students who enrolled in the course in preregistration will have priority for spaces in the class. Open spaces will be filled at the discretion of the professor.

# Course Requirements

There will be two midterm exams, one covering the first three sections of the syllabus and the other covering the fourth and fifth sections. Dates will be announced in class. Each midterm will be worth 15% of the class grade. There will be a final exam that will be cumulative, although the material will be drawn mostly from the latter part of the course, which will be worth 25% of the grade. There will be four problem sets that will count 20% of the grade. There will also be two short (about three pages) papers in which students develop their own game theoretic models of topics of their choice and describe the model's implications. Each of these papers will be worth 10% of the grade. Last, participation in class discussions will be worth 5% of the grade.

**Textbook**

*Strategy: An Introduction to Game Theory*, Joel Watson, 3rd edition (2013)

Readings will be assigned from the textbook and from the course reading list, and will be announced in class.

**Accommodations:**

I will make recommended accommodations for students with documented learning disabilities, per the Dean of Students office. Students who wish such accommodations should contact me during the first week of the course so that I can make appropriate arrangements.

**Syllabus**

1. Course introduction (Chapter 1)
2. Strategic form games (Chapters 3-13)  
   A. Formal definition of a game - players, actions, knowledge, payoffs  
   B. Strategies and equilibria: dominance and Nash  
   C. Problems of multiple equilibria; focal points and experimental methods  
   D. Continuous strategy games and reaction functions  
   E. Simple oligopoly models
3. Extensive form games (Chapters 2, 14-20)  
   A. Definition of extensive form: nodes, branches, paths  
   B. Limited information: information sets, moves by Nature, Harsanyi transformation  
   C. Relations between strategic form and extensive form games   
   D. Subgame perfect equilibria and trembling-hand equilibria   
   E. Bargaining
4. Repeated games (Chapters 22-23)  
   A. Finitely repeated games: backwards induction, Zermelo's Theorem  
   B. Infinitely repeated games: the Folk Theorem  
   C. Applications of repeated game theory to industrial organization: entry deterrence, the chain-store paradox, and maintaining cartels  
   D. Games of reputation and credibility  
   E. Games of ethics and ethical implications
5. Games of asymmetric information (Chapters 21, 24-29)  
   A. Market failures caused by asymmetric information  
   B. Signaling, revelation, and cheap talk  
   C. Principle-agent problems and commitment/hold-up problems  
   D. Allocating public goods
6. Applications of game theoretic models (assigned readings)A. AuctionsB. Asset marketsC. Learning by doing and evolution