Haverford College - Department of Economics  
ECON 355 : ADVANCED MICROECONOMICS: UNCERTAINTY  
Spring Term 2018  

SYLLABUS

Course Description
This is an advanced course in microeconomic theory. The first half of the course focuses on decision making in non-strategic (competitive) environments. Topics covered include: (i) consumer and producer theory; (ii) theories of choice under uncertainty, including measures and attitudes towards risk; (iii) applications to insurance and portfolio choice; and (iv) general equilibrium and welfare. The second half of the course introduces strategic interaction. We begin with a formal treatment of game theory, and then study several applications in the context of asymmetric information. These include signalling and screening as responses to problems of adverse selection, optimal contracting to mitigate moral hazard, and auction theory.

Instructor  
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Teaching Assistant  
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Texts
- Osborne, Introduction to Game Theory, 2012

Prerequisites
MATH121. (MATH215, and ECON360 are desirable. Economics majors shall have completed ECON300.) This course is intended as part of the Mathematical Economics concentration and is most suitable for students who enjoy microeconomic theory and thinking analytically.
Assessment
Student evaluation will be based on weekly problem sets (30%), a mid-term exam (30%) and a final exam (40%).

Problem sets shall be submitted via Moodle, typically on a Thursday. Late problem sets will incur a penalty of 10% if submitted within 2 days of deadline, and 20% if submitted any later. Problem sets should be typeset in Latex. Solutions will be posted on Moodle the following week.

Course Outline

1. Consumer & Producer Theory (2 weeks)
2. Theory of Choice Under Uncertainty (3.5 weeks)
   a. Lotteries and Expected Utility
   b. Non-expected utility; Violations of Expected Utility, Prospect Theory
   c. Updating Beliefs and Bayes Rule; Value of Information
   d. Risk (Risk Measures and Risk Preferences)
3. Applications in Markets (2 weeks)
   a. Insurance Markets
   b. Asset Markets
4. General Equilibrium and Welfare (2 weeks)
   a. Optimal Risk Sharing
   b. General Equilibrium, Asset Pricing, CAPM
5. Game Theory (2 weeks)
   a. Equilibrium concepts: Nash (existence of), Subgame perfection
   b. Games of Incomplete Information
   c. Repeated Games
6. Applications (2.5 weeks)
   a. Adverse Selection: Signalling and Screening
   b. Moral Hazard: Optimal Contracting
   c. Auction Theory