

實驗經濟學課程大綱 Course Syllabus for Experimental Economics

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Class Time: Thursday, 9:10am-12:10pm at 社法 13 教室

Office Hours: By email appointment

Course Description:

This is a graduate level course on experimental economics. The purpose is to provide a thorough introduction to experimental economics so students can start to perform their own research in this field. You will be expected to write a research proposal by the end of the course.

Specific goals of this class include:

1. **Introduction to experimental economics:** After the class, students are expected to name several experiments performed in different fields of economics, and describe how the experimental results affirm (or differ from) economic theory and/or field data. During class, students have to choose a particular class topic, record the lecture and write a review.
2. **Experimental methods:** After the class, students are expected to understand how to design and run an experiment, as well as how to analyze the data they obtain. During class, students are expected to write a research proposal that
 - a. describes a proposed experiment (with a sample instructions for subjects),
 - b. why should we care about this experiment,
 - c. why the experiment is designed this way (compared to other possible designs),
 - d. expected results, and,
 - e. methods to analyze the data (and possibly some simulation results).
3. **Evaluate the most current research:** After the class, students are expected to develop the ability to read recent journal articles in experimental economics, and evaluate the quality of the papers. During class, students are expected to read all assigned journal articles, write one (referee) review report for them, and present the article in class.

References and Textbook:

The reading list (see below) assigns journal articles. Basic topics covered by these textbooks:

1. Camerer, Colin F. (2003), *Behavioral Game Theory: Experiments in Strategic Interaction*, Princeton University Press (hereafter *BGT*). **Required reading** for the first 8 weeks, providing an introduction to experimental economics & behavioral game theory.
2. Kagel, John and Alvin Roth, ed. (1995), *Handbook of Experimental Economics*, Princeton University Press (hereafter *HEE*). Comprehensive (but old) literature review on experimental economics. Recommended to graduate students as a background review.
3. Holt, Charles (2007), *Markets, Games and Strategic Behavior*, Addison-Wesley (hereafter *MGS*). Most up-to-date undergraduate textbook on experimental economics. Undergraduate students who take this course can read this book in lieu of journal articles.

Assignments:

You need to hand in a midterm review report on a basic topic (50%) and a final research proposal (50%). Class presentation of your research proposal is highly recommended and earns extra credit. If you are a graduate student taking this course, you will also have to review a journal article, write a referee report and present the article in class.

Course outline:

Part A: Overview of Experimental Economics

- [2 /21] **Introduction:** *BGT*, Ch. 1, *HEE*, Ch. 1, and *MGS*, Ch. 1-3.
- [3 / 6] **Dictator, Ultimatum and Trust Games:** *BGT*, Ch. 2, *HEE*, Ch. 2, & *MGS*, Ch. 12-13.
- [3 /13] **Mixed-Strategy Equilibrium:** *BGT*, Ch. 3 and *MGS*, Ch. 5, 24.
- [3 /20] **Bargaining:** *BGT*, Ch. 4, *MGS*, Ch. 23, and *HEE*, Ch. 4.
- [3 /27] **Dominance-Solvable Games:** *BGT*, Ch. 5.
- [4 / 3] **Learning:** *BGT*, Ch. 6.
- [4 /10] **Coordination:** *BGT*, Ch. 7, *HEE*, Ch. 3, and *MGS*, Ch. 26.
- [4 /17] **Signaling and Reputation:** *BGT*, Ch. 8, and *MGS*, Ch. 33.
- [4 /24] **Individual Decision Making - Risk and Time:** *HEE*, Ch. 8, and *MSG*, Ch. 27-29.
- [5 / 1] **Neuroeconomics - fMRI:** [*Handbook of Psychophysiology*](#), 3rd ed., Ch. 2.
- [5 / 8] **Neuroeconomics - Eyetracking:** *Handbook of Psychophysiology*, 2nd ed., Ch. 6, 28.
- [5 /15] **Auctions: Theory, Lab and Field:** *MGS*, Ch. 19-22, and *HEE*, Ch. 7.
- [5 /22] **Market Experiments and IO:** *HEE*, Ch. 5, and *MGS*, Ch. 6-10.
- [5 /29] **Experimental Asset Markets and Bubbles:** *HEE*, Ch. 6 and *MGS*, Ch. 11, 34.
- [6 / 5] **Public Choice Experiments:** *HEE*, Ch. 2, and *MSG*, Ch. 14-18.
- [6 /12] **Field Experiments:** Harrison and List (2004), "[Field Experiments](#)", *JEL*.
Duflo, Glennerster and Kremer (2007), "[Using Randomization in Development Economics: A Toolkit](#)," forthcoming in *Handbook of Developmental Economics*, Vol. 4.

Part B: Experimental Methods

- a. **The Gold Standards: Basic Principles of Experimental Design**
- b. **Experimental Design:**
 - i. **Goals**
 - ii. **Control**
 - iii. **Programming the Experiment: z-Tree, the Psychophysics Toolbox, etc.**
 - iv. **Pre-testing: Simulation**
 - v. **Pre-testing: Pilot Studies**
- c. **Running an Experiment:**
 - i. **Giving Instructions and Comprehension Tests**
 - ii. **The Experimental Session(s)**
 - iii. **Post-Experimental Surveys**
 - iv. **Handing out Payments**
 - v. **What if Something Unexpected Happens?**
- d. **Data Analysis:**
 - i. **Summary Statistics**
 - ii. **Regressions and other Basic Econometrics**
 - iii. **Maximum Likelihood Estimations: QRE, Cognitive Hierarchy, level-k, EWA...**
 - iv. **Out-of-Sample Prediction**
 - v. **Handling Eyetracking Data: Time Series and Markov Switching Models**
 - vi. **Handling fMRI Data: SPM2**

Reading List: (* means required reading.)

[2 /21] **Introduction:** *BGT*, Ch. 1 and *MGS*, Ch. 1-3.

Other References: *HEE*, Ch. 1.

*Haile, Hortacsu and Kosenok (2008), "On the Empirical Content of Quantal Response Equilibrium," *American Economic Review*, forthcoming.

Rabin (2003), "The Nobel Memorial Prize for Daniel Kahneman," *Scandinavian Journal of Economics*, 105 (2), 157-182.

Bergstrom (2003), "Vernon Smith's Insomnia and the Dawn of Economics as Experimental Science," *Scandinavian Journal of Economics*, 105 (2), 181-205.

McKelvey and Palfrey (1995), "Quantal Response Equilibria for Normal Form Games," *Games and Economic Behavior*, 10, 6-38.

McKelvey and Palfrey (1998), "Quantal Response Equilibria for Extensive Form Games," *Experimental Economics*, 1, 9-41.

[3 / 6] **Dictator, Ultimatum and Trust Games:** *BGT*, Ch. 2 and *MGS*, Ch. 12-13.

Other References: *HEE*, Ch. 2.

*Knoch, Pascual-Leone, Meyer, Treyer and Fehr (2006), "[Diminishing Reciprocal Fairness by Disrupting the Right Prefrontal Cortex.](#)" *Science* 314, 3 November 2006, 912-915. (TMS)

De Quervain, Fischbacher, Treyer, Schellhammer, Schnyder, Buck, and Fehr (2004), "[The Neural Basis of Altruistic Punishment.](#)" *Science* 305, 27 August 2004, 1254-1258. (PET)

Kosfeld, Heinrichs, Zak, Fischbacher and Fehr (2005), "[Oxytocin increases Trust in Humans.](#)" *Nature* 435, 2 June 2005, 673-676. (Oxytocin)

[3 /13] **Mixed-Strategy Equilibrium:** *BGT*, Ch. 3 and *MGS*, Ch. 5, 24.

Other References:

*Ostling, Wang, Chou and Camerer (2007), "*Field and Lab Convergence in Poison LUPU Games,*" working paper.

Crawford and Iriberry (2007), "Fatal Attraction: Saliency, Naivete, and Sophistication in Experimental 'Hide-and-Seek' Games," *American Economic Review*, 97(5), 1731-1750.

[3 /20] **Bargaining:** *BGT*, Ch. 4, and *MGS*, Ch. 23.

Other References: *HEE*, Ch. 4.

Johnson, Camerer, Sen and Rymon (2002), "[Detecting Failures of Backward Induction: Monitoring Information Search in Sequential Bargaining.](#)" *Journal of Economic Theory*, 104 (1), 16-47.

[3 /27] **Dominance-Solvable Games:** *BGT*, Ch. 5.

Other References:

*Costa-Gomes and Crawford (2006), "Cognition and Behavior in Two-Person Guessing Games: An Experimental Study," *American Economic Review*, 96 (5), 1737-1768.

- *Camerer, Ho and Chong (2004), “A Cognitive Hierarchy Model of Games,” *Quarterly Journal of Economics*, 119(3), 861–898.
- Holt and Goeree (2004), “[A model of noisy introspection](#),” *Games and Economic Behavior*, 46 (2), 365-382.
- Costa-Gomes, Crawford and Broseta (2001), “Cognition and Behavior in Normal-Form Games: An Experimental Study,” *Econometrica*, 69 (5), 1193-1235.

[4 / 3] **Learning:** *BGT*, Ch. 6.

Other References:

- *Ho, Wang and Camerer (2008), “Individual Differences in EWA Learning With Partial Payoff Information,” *Economic Journal*, 118, 37-59.
- *Ho, Camerer and Chong (2007), “Self-tuning experience weighted attraction learning in games,” *Journal of Economic Theory*, 133, 177-198.
- *Wilcox (2006), “Theories of Learning in Games and Heterogeneity Bias,” *Econometrica*, 74 (5), 1271-1292.
- Salmon (2001), “An Evaluation of Econometric Models of Adaptive Learning,” *Econometrica*, 69 (6), 1597-1628.
- Camerer and Ho (1999), “Experience-weighted Attraction Learning in Normal Form Games,” *Econometrica*, 67(4), 827–874.

[4 /10] **Coordination:** *BGT*, Ch. 7 and *MGS*, Ch. 26.

Other References: *HEE*, Ch. 3.

- Weber (2006), “[Managing Growth to Achieve Efficient Coordination in Large Groups](#),” *American Economic Review*, 96(1), 114-126.

[4 /17] **Signaling and Reputation:** *BGT*, Ch. 8, and *MGS*, Ch. 33.

Other References:

- Bereby-Meyer, Yoella and Alvin E. Roth (2006), “[The Speed of Learning in Noisy Games: Partial Reinforcement and the Sustainability of Cooperation](#),” *American Economic Review*, 96 (4), 1029-1042.

[4 /24] **Individual Decision Making - Risk and Time:** *HEE*, Ch. 8, and *MSG*, Ch. 27-29.

Other References:

- *Tomomi Tanaka, Colin Camerer and Quang Nguyen (2007), “[Risk and time preferences: Experimental and household data from Vietnam](#),” revised and resubmitted to the *American Economic Review*.
- *McClure, Ericson, Laibson, Loewenstein, and Cohen (2007) “[Time Discounting for Primary Rewards](#).” *Journal of Neuroscience*, 27: 5796–5804.
- Elaine Liu (2008), “[Time to Change What to Sow: Risk Preferences and Technology Adoption Decisions of Cotton Farmers in China](#),” job market paper.

[5 / 1] **Neuroeconomics – fMRI:** *Handbook of Psychophysiology*, 3rd ed., Ch. 2: Wager, Hernandez, Jonides and Lindquist (2007), “Elements of functional Neuroimaging.”

Other References:

- *Kang, Hsu, Krajbich, Loewenstein, McClure, Wang, and Camerer (2007), “The Hunger for Knowledge: Neural Correlates of Curiosity,” working paper.

*Hsu, Bhatt, Adolphs, Tranel and Camerer (2005), "[Neural Systems Responding to Degrees of Uncertainty In Human Decision Making](#)," *Science*, 310, 9 December 2005, 1624-1625. ([Perspectives](#) by Rustichini.)

McClure, Laibson, Loewenstein and Cohen (2004), "[Separate Neural Systems Value Immediate and Delayed Monetary Rewards](#)" *Science* 306, October 15 2004.

[5 / 8] **Neuroeconomics - Eyetracking:** *Handbook of Psychophysiology*, 2nd ed., Ch. 6 & 28.

Other References:

*Wang, Spezio and Camerer (2008), "Pinochio's Pupil: Studying Truth-telling and Lying in Sender-Receiver Games", working paper.

Gabaix, Laibson, Moloche and Weinberg (2006), "[Costly Information Acquisition: Experimental Analysis of a Boundedly Rational Model](#)," *American Economic Review*, 96 (4), 1043-1068. (with [Technical Appendix](#))

[5 /15] **Auctions: Theory, Lab and Field:** *MGS*, Ch. 19-22, and *HEE*, Ch. 7.

Other References:

*Crawford and Nagore Iriberri (2007), "Level-k Auctions: Can a Non-Equilibrium Model of Strategic Thinking Explain the Winner's Curse and Overbidding in Private-Value Auctions?," *Econometrica* 75(6), 1721–1770.

*Goeree and Holt (2007), "Hierarchical Package Bidding: A Paper & Pencil Combinatorial Auction", working paper.

[5 /22] **Market Experiments and IO:** *HEE*, Ch. 5, and *MGS*, Ch. 6-10.

Other References:

Alton and Plott (2007), "[Principles of Continuous Price Determination in an Experimental Environment with Flows of Random Arrivals and Departures](#)," working paper.

McKinney, Niederle and Roth (2005), "[The collapse of a medical labor clearinghouse \(and why such failures are rare\)](#)," *American Economic Review*, 95 (3), 878-889.

[5 /29] **Experimental Asset Markets and Bubbles:** *HEE*, Ch. 6 and *MGS*, Ch. 11, 34.

Other References:

Bossaerts, Plott and Zame (2007), "[Prices and Portfolio Choices in Financial Markets: Theory, Econometrics, Experiments](#)," *Econometrica*, 75 (4), 993–1038.

Snowberg, Wolfers and Zitzewitz (2007), "[Partisan Impacts on the Economy: Evidence from Prediction Markets and Close Elections](#)," *Quarterly Journal of Economics*, 122(2), 807-829.

[6 / 5] **Public Choice Experiments:** *HEE*, Ch. 2, and *MSG*, Ch. 14-18.

Other References:

Choi, Gale and Kariv (2007), "[Sequential Equilibrium in Monotone Games: Theory-Based Analysis of Experimental Data](#)," Accepted subject to minor revisions, *Journal of Economic Theory*.

Karlan and List (2007), "Does Price Matter in Charitable Giving? Evidence from a Large-Scale Natural Field Experiment", *American Economic Review*, 97(5), 1774-1793.

Kurzban, McCabe, Smith and Wilson (2001), "Incremental Commitment and Reciprocity in a Real-Time Public Goods Game," *Personality and Social Psychology Bulletin*, 27(12), 1662-1673.

[6 /12] Field Experiments:

Harrison and List (2004), "[Field Experiments.](#)" *Journal of Economic Literature*, 42(4), 1009-1055.

Duflo, Glennerster and Kremer (2007), "[Using Randomization in Development Economics: A Toolkit.](#)" forthcoming in *Handbook of Developmental Economics*, Vol. 4, ed. by T. Schultz and John Strauss, North-Holland.

Other References:

Duflo, Dupas and Kremer (2007), "[Peer Effects, Pupil-Teacher Ratios, and Teacher Incentives: Evidence from a Randomized Evaluation in Kenya.](#)" discussion paper.

Gneezy and List (2006), "Putting Behavioral Economics to Work: Testing for Gift Exchange in Labor Markets Using Field Experiments," *Econometrica*, 74(5), 1365-1384.

Bertrand and Mullainathan (2004), "[Are Emily and Greg More Employable than Lakisha and Jamal? A Field Experiment on Labor Market Discrimination.](#)" *The American Economic Review*, 94 (4), 991-1013.